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Reports of
The Princeton University Expeditions to Patagonia, 1896-1899

J. B. HATCHER, in Charge

EDITED BY

WILLIAM B. SCOTT
BLAIR PROFESSOR OF GEOLOGY AND PALÆONTOLOGY, PRINCETON UNIVERSITY

VOLUME VIII—BOTANY—Section III

Revision of Flora Patagonica

BY

GEORGE MACLOSKIE and PER DUSÉN

WITH FURTHER NOTES

BY

PROFESSOR CARL SKOTTSBERG
UPPSALA UNIVERSITY

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thanks to Dr. Dusén's assistance, most of the specimens have been properly named.

It was part of my plan to make the work of permanent value, by having it well revised; and once more I appealed to my generous friend Dr. Dusén. Whilst he was engaged on this troublesome business, Professor Skottsberg wrote to me for specimens of the plants, thus ensuring a double revision; and both have now carefully completed their work. Their reports, though prepared independently of each other, are singularly harmonious in the outcome. In a few cases I find it best not to combine them, but to give each separately, leaving to the readers the privilege of comparing them.

I have also had the benefit of notes on some Gramineæ by Dr. Teodoro Stuckert, of Cordoba, Argentina; determinations of species of *Acæna* by Professor Bitter, of Bremen; notes published by Professor Rendle, of the British Museum; and the revision of *Cruciferæ* by Gilg and Muschler in the *Botanisches Jahrbuch.* And I beg to thank all these gentlemen for seasonable assistance during my ten years' conflict with this affair; also Dr. W. B. Scott, and Dr. M. S. Farr, of Princeton, for help in correcting the press. And I cannot but confess my sense of thankfulness to God, who has spared my health, and given me opportunities of laboring in a very interesting bit of scientific work.

Whilst not attempting to revise the Cryptogams, I have the satisfaction of referring for them to the fine reports of the Swedish Southern Exploring Expedition (1901–1903) which include the botany of Fuegia, of the Falkland Isles, of South Georgia, Kerguelen Land, and the South Polar regions as far as investigated; all carefully illustrated. Carl Skottsberg's reports (in German) correlate their Phanerogamic botany; others give us the algology, and their Bryological Flora (in French, by Jules Chardot). This fine book reinforces arguments from other sources, in favor of the theory that there was a land-connection, in early geological times, between South America, New Zealand, Kerguelen, Tasmania, and South Georgia, as well as South Shetland Isles, to which Amundsen's discoveries now enable us to add Antarctica, with its polar-Andine mountain chain. Both Skottsberg and Chardot emphasize the service rendered by Dusén in these questions; through his work on the Mosses of Patagonia and Fuegia, we now know of at least 150 additional species in those countries, half of them new to science; and now the Magellan mosses number 444 species;

to be in all probability 500 species, so soon as those collected by Darwin during the voyage of he "Beagle" (in 1836) and more recently by Hatcher, shall find men to examine and name them. Chardot also informs us that 79 species of mosses are common to Magellan and New Zealand; 60 common to Magellan and Tasmania; and Skottsberg finds 43 species common to Magellan and the small island of Kerguelen. All these figures become significant and interesting when regarded as evidence of prehistoric connection of lands which are now widely separated. Our knowledge of the Sedges, and also of the Hooked Sedges (Unciniæ), of the Southern lands, has been advanced by the valuable contribution of Kükenthal in Engler's Pflanzenreich; and I have endeavored to utilize this help.

GEORGE MACLOSKIE.

PRINCETON UNIVERSITY,
August, 1913.

PTERIDOPHYTA.

As to the Pteridophytes of this district, we refer to the very important paper by Dr. C. Christiansen: On some species of Ferns collected by Dr. C. Skottsberg in temperate South America.—Arkiv för Botanik, Bd. 10, n. 2. (Stockholm.) When quoting this paper we use the following abbreviation: C. Chr. Some Ferns.

Family 1. OPHIOGLOSSACEÆ. Macl., p. 127.

OPHIOGLOSSUM L. (*Chiroglossa* Presl, by Macl.)

O. PALMATUM L.—Macl., p. 127.[1]

The species is to be deleted. It occurs in tropical and subtropical countries, but is not found in Patagonia.

O. CROTALOPHOROIDES Walt.

A very interesting find made in E. Falkland by Dr. Halle, member of the Swedish Expedition to Patagonia and Fuegia, 1907–1909.

This species occurs also in Central Chili, and in the Southern United States.

BOTRYCHIUM Sw. Macl., p. 127.

Spore cases sessile in 2 rows on the face of spikes which form a compound panicle.

(Professor Skottsberg regards all the Patagonian specimens of *Botrychium* as belonging to one species, which he would provisionally call *B. lunaria*; but it differs from that widely distributed species; and he had reserved a final decision for further study. The var. *Dusenii* meets this case.)

BOTRYCHIUM ANALYSIS.

- *a.* Small; bud inclosed in base of stem.
  - *b.* Vernation straight; sterile part simple or 2–5-lobed. *B. simplex.*
  - *b2.* Vernation partly inclined.
    - *c.* Buds glabrous; sterile frond pinnate.
      - *d.* Sterile parts alone bent (Eur., N. Amer., Staten Is.). *B. lunaria.*
      - *d2.* Both parts bent in vernation. *B. matricariæfolium.*

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[1] All references to Macloskie will be abbreviated like the above. As to the signification of other abbreviations used in the following, I refer to the appended list of literature.

c2. Buds pilose; sterile parts ternate, long-stalked. (Widely distributed.) *B. ternatum.*

b3. Vernation wholly inclined; sterile part triangular, sessile. (Widely distributed.) *B. lanceolatum.*

a2. Large. (Asia, Europe, America.) *B. virginiatum.*

B. LUNARIA Sw.

Stem stout, about 6 cm. long, sterile fronds with subsessile lunar leaves, as entire or notched pinnæ on both sides.

S. Patagonia; S. Fuegia; Staten Is.; also somewhat cosmopolitan, in colder climates.

Add Macl., p. 127:

B. LUNARIA (L.) Sw. var. DUSENII Christ.

Minus, stipite basin versus magis incrassato, folio sterili altius, *i. e.*, ultra medium plantæ inserto, vix 3 cm. longo, basi vix 2 cm. lato, rachi dilatata, pinnis paucis, 4–5 utrinque, distantibus, cuneato-rhombeis, antica haud convexo-decurvatis, truncato-obtusis.

S. Patagonia, north of Lago San Martin by Rio Fósiles in denuded slopes at the height of about 800 m.

The plant is smaller than the type and the base of the stipe is thickened. The sterile frond, scarcely 3 cm. long and 2 cm. broad at its base, is attached above the middle of the stipe; pinnæ 4–5 on both sides of the flattened rachis, distant, cuneate-rhombic, convex and recurved at the truncate end.

B. RAMOSUM (Borckh.) Aschers.

Folium ad 20 cm. usque longum, stipite inferne plerumque rufo, ad 12 cm. usque longo et 4 mm. crasso, plerumque folio sterili multo longiore; frons sterilis ovata vel oblonga, obtusa vel truncata, bipinnata vel pinnata; pinnis pinnatifidis; pinnæ utrique 2–6, plerumque oppositæ, remote dispositæ, patentissimæ vel erecto-patentes, plerumque oblongæ, obtusæ; pinnulæ rotundatæ vel oblongæ, obtusæ vel truncatæ, apice sæpe crenulato-lobatæ, lobulis binis ternisve; frons fertilis bi- vel tripinnata.

S. Patagonia, north of Lago San Martin, together with the foregoing.

It is very remarkable that the species should associate with *B. lunaria* or its varieties in the Southern Hemisphere as well as in Europe.

Description.—Leaves (in Patagonian specimens) scarcely more than 10 cm. tall; stipe brown-red at its base, usually many times longer than the frond; sterile frond ovate or oblong, obtuse or truncate, bipinnate or once-pinnate, with pinnatifid pinnæ; pinnæ usually 2–6 on both sides of the rachis, generally opposite, remotely attached, subhorizontal or erect-patent, usually oblong, obtuse; pinnulæ suborbicular to oblong, obtuse or truncate, often crenate-lobed at the end with 2 or 3 lobulets; fertile frond 2- or 3-pinnate.

Family 2. HYMENOPHYLLACEÆ.

HYMENOPHYLLUM L.

H. ABRUPTUM Hook. fil. var. BREVIFRONS (Kze.) Franck.

Should be deleted, being, in fact, a new species described by C. Christiansen under the name of *H. Skottsbergii* C. Christ. Some Ferns, p. 22.

H. DENTATUM Cav.

(Vice *H. Bridgesii* Hook.—Macl., p. 128.)

H. Bridgesii and *H. dentatum* Cav. are identical. The latter name being older, it should be chosen instead of the former.

H. DUSENII Christ.—Macl., p. 12.

Should be deleted, being identical with *Serpyllopsis cæspitosa* (Gaud.) C. Christ. var. *Dusenii* Christ. C. Christ.

H. GLABBERRIMUM C. Christ. is to be replaced by the following:

H. FALKLANDICUM Bak.—Macl., p. 129.

Syn. *H. cæspitosum* Christ., *H. glebarium* Christ.

Occurs also in Fuegia and in South Georgia.

Macl., p. 130.—*H. nigricans* Colla.

H. nigricans is identical with *H. dichotomum* Cav. and is, therefore, to be deleted.

Macl., p. 130.—*H. subtilissimum* Kze.

H. subtilissimum should be replaced by *H. ferrugineum* Colla, the latter name being the older.

(Addenda to *Hymenophyllum*, p. 128.)

H. TRICHOCAULON Phil., Anal. Mus. Nac. Chil., Tom. 94, p. 360.

Stipes pilis nigris sat longis vestitus, c. 2.5 cm. longus; frons ovata, c. 5.0 cm. longa et 3.5 cm. lata, glabra, tripinnata, pinnis (c. 10 utrinque)

pinnulis laciniisque dense confertis, plerumque imbricatis, segmentis integerrimis, oblongo-linearibus, obtusis; pinnæ ac pinnulæ pedicellatæ.

NW. Patagonia, Rio Manso; W. Magellan.

Add Macl., p. 128:

H. TUNBRIDGENSE (L.) Sm.

Pusillum; rhizoma valde ramosum, tenue, atro-brunneum, juventute pilis brunnescentibus vestitum, demum glaberrimum; folia 2–6 cm. longa, sordido-viridia, opaca, primo pilis brunnescentibus obtecta, demum glaberrima; stipes frondem dimidiam plerumque æquans, in parte superiore cum rachi alatus; pinnæ utrinque 7–15, alternantes, confertæ, inferiores utrinque, superiores antice pinnulatæ, pinnulis lineari-oblongis, 1-nervatis, interdum bilobatis, remote acuteque serratis, apice truncatis vel rotundatis; sori plerumque solummodo in parte dimidia superiore frondis dispositi, nervos secundarios posticos terminantes; segmenta indusii semiorbicularia vel obovata, incisa, serrata; annulus obliquus.

W. Magellan. S. Fuegia.

Description. — Leaves 2–6 cm. long, in their young state covered with brownish hairs, soon to fall off, when adult glabrous, dirty-green, pale; stipe usually half as long as the frond, winged at the top as well as at the rachis; pinnæ 7–15 on both sides of the rachis, alternate, crowded, the lower being pinnulae on both sides, the uppermost only on the upper side, the pinnulæ being linear-oblong, 1-nerved, sometimes bilobed, remotely and acutely serrate and truncate or rounded at the end; sori generally confined to the upper half of the frond, attached to the end of the secondary nerves on the lower side of the pinnæ; indusium with semiorbicular or obovate segments which are incised and serrate.

Add the following:

H. RARUM R. Br. — Macl., p. 130.

The occurrence of this species in S. America appears to be somewhat doubtful. *H. rarum* is omitted in The Reports of the French Cape Horn Expedition, and has been found neither by Skottsberg, nor by Spegazzini and Dusén. The S. American plant hitherto stated to belong to *H. rarum* represents, according to Christiansen, some forms of 21, *Hymenophyllum cuneatum* Kze, Anal. pterid., p. 50, which consequently should replace *H. rarum* R. Br.

H. cuneatum Kee seems to be a rather rare plant in this district, found by Skottsberg in W. Patagonia at Puerto Olale by Golfo de Penas, certainly no other locality of this species being known from the district we have in sight. Whether the specimens brought home from S. Fuegia by J. D. Hooker, and stated by him to represent a variety of *H. rarum* R. Br. belong, in fact, to that species may, at present, be an open question.

H. CUNEATUS Kee is found also in S. Chili, Chiloe, and in Juan Fernandez.

It may also be mentioned that

H. PELTATUM Poir. Desv.—Macl., p. 130 (*H. peltatum* Poir) (syn. *H. Wilsoni* Hook.) is by C. Christiansen separated from *H. falklandicum* Bak. He emphasizes, however, the close affinity between these species. (C. Christ., Some Ferns, p. 25.) Skottsberg, on the other hand, in his paper "A Botanical Survey of the Falkland Islands," p. 7, gives *H. peltatum* as a synonym of *H. falklandicum*.

H. SKOTTSBERGII C. Christ., Some Ferns, p. 22.

Syn. *H. abruptum* Hook. fil. var. *brevifrons* (Kze.) C. Christ.

S. Fuegia, Ile Clarence and Lago Cami (Lago Fagnano); W. Patagonia, Port Otway and Sholl-bay.

H. tortuosum Hook. et Grev.—Macl., p. 131 (*H. tortuosum* Banks et Sol.).

Also in the Falkland Is.

TRICHOMANES L.

T. FLABELLATUM Bory. Macl., p. 128. (*T. flabellatum.*)

Gaudichaud and D'Urville are the only botanists who have noticed the presence of this species in the Falkland Islands In Flora Antarctica it is recorded. Hooker, however, finds it strange that the French botanists make no mention of *Hymenophyllum Wilsoni* Hook, although it is common in those islands

T. CÆSPITOSUM (Gaud.) Hook. Macl., p. 128.

Should be deleted, being identical with *Serpyllopsis cæspitosa* (Gaud.) C. Chr.

There is, perhaps, some misapprehension regarding *H. peltatum* (*H.*

Wilsoni), as Hooker seems to presume. Skottsberg has recently expressed a surmise that the Liverwort *Symphyogyna crassifrons* Sull. is identical with *T. flabellula.* Be this as it may, the last is too problematical to be recognized as a member of the flora of the Falkland Is.

Family 3. CYATHEACEÆ.

ALSOPHILA PRUINATA Kaulf. — Macl., p. 131.

Add Macl., p. 131: Occurs also at Rio Palena, in the northern section of Patagonia.

SERPYLLOPSIS van der Bosch.—Cf. C. Chr., Some Ferns, p. 28.

S. CÆSPITOSA (Gaud.) C. Chr.

Syn. *Hymenophyllum cæspitosum* Gaud.
Trichomanes cæspitosum Hook.
Serpyllopsis antarctica v. d. Bosch.

Falkland Is.; Staten I.; S. & W. Fuegia; southern section of W. Patagonia.

S. CÆSPITOSA (Gaud.) C. Chr. var. ELONGATA Hook.

S. Fuegia. Almirantazgo; W. Patagonia, Canal Jeronimo.

S. CÆSPITOSA (Gaud.) C. Chr. var DENSIFOLIA (Phil.) C. Chr.

Syn. *Hymenophyllum densifolium* Philippi.

W. Patagonia, Guaitecas Is.: Chili; Juan Fernandez.

S. CÆSPITOSA (Gaud.) Chr. var. DUSENII Christ.

S. Fuegia, in the alpine region near Lago Cami (Lago Fagnano); W. Magellan; Desolation I.

DICKSONIA L'Her.

Fruit-dots small, globular, at end of a free vein, near the margin in sporecases in a globular receptacle, open apically, and surrounded by a cuplike involucre.

D. ANDINA Phil. Anal. Mus. Nac. Chil., Tom. 94, p. 359.

Philippi's description is, undoubtedly, based on incomplete material and rather imperfect. I, therefore, do not translate it, but only refer to the original description.

According to C. Christ. Ind. Fil., p. 220, this fern is supposed to belong to the genus *Dennstædtia*.

Add Macl., p. 132:

DRYOPTERIS Adans.

D. FILIX-MAS (L.) Schott. var. ELONGATA (Ait.) C. Chr.

Falkland, widely spread in temperate regions, also in S. America, but scarcely occurring south of Brazil (Skottsberg).

D. SPECTABILIS (Fée). (Plate IV, 1–4.)

Folia elata, c. 12 dm. alta; stipes crassus, c. 4 dm. longus, in una facie sulcatus, in altera squamis plus minus fragmentariis vestitus, basin versus squamis atrobrunneis, subnitentibus, ad 2.5 cm. usque longis, angustis, cuspidatis, dense confertis barbatus; rachis utrinque ferrugineo-pilosa vel subtomentosa, in facie superiore sulcata; frons ambitu ovalis, robusta-subtus ad nervos hispida, inferne saltem 4-pinnatisecta, pinnis suboppositis, lanceolatis vel ovato-lanceolatis, segmentis crenatis, marginibus recurvatis; sori in utroque dimidio pinnularum uniseriati; spori oblongi, glabri, diaphani.

Description (of the West Patagonian specimens).—Stipe thick, on one side sulcate, on the other (the opposite) sparingly covered with fragments of scales, below densely covered with dark brown, very narrow, cuspidate scales up to 2.5 cm. long; rachis all over densely covered with small, ferruginous hairs, nearly subtomentose, on the upper side sulcate; frond oval, robust, on its under side hispid along the nerves, at the base at least 3-pinnate; pinnæ subopposite, lanceolate or ovate-lanceolate; pinnulæ crenate with recurved margins; sori arranged in a single row on both sides of the middle nerve of the pinnulæ; spores oblong, glabrous, diaphanous.

W. Patagonia by Rio Aysen; in Chili; Juan Fernandez I.

The rank of species has been given to the West Patagonian specimens, but, according to C. Chr., Ind. Fil., p. 490, *D. spectabilis* (*Phegopteris spectabilis* Fée) represents only a variety of *Dryopteris subincisa* (Willd.) Urb. Not having any specimen of the latter at my disposal and, consequently, not being able to state the difference between the typical *D.*

subincisa and the West Patagonian plant, I was obliged to treat the specimens from Rio Aysen as a species. I will say, however, that it is very probably more correct to regard the plant in question as a variety of *D. subincisa.*

D. SPINULOSA (Müll.) O. K. var. DILATATA (Hoffm.) Chr.

Falklands; widely spread in temperate regions; not previously found in S. America (Skottsberg).

POLYSTICHUM Roth.—Macl., p. 132, *Dryopteris.*

Frond lanceolate, coriaceous, bipinnate; pinnæ lanceolate, obtuse, rough-paleaceous underneath: pinnules trapezoid mucronate, spinulose-toothed, sometimes subauriculate. Spores roughish.

P. ACULEATUM (L.) Roth var.—Macl., p. 133 (sub *Dryopteris*).

Only the bare name being given by Macloskie, I may assume that it refers to the typical form of this species.

Macloskie refers to it as occurring in S. Patagonia, and Reiche in N. W. Patagonia at Rio Manso and Skottsberg in the deciduous forests of northwest Patagonia. Although I have seen no specimen from those localities, I may be allowed to doubt whether it, really, is the typical form that is meant here.

P. ADIANTIFORME (Forst.) J. Sm.—Macl., p. 133, sub. *Dryopteris.*
Syn. *Aspidium coriaceum* Sw.

Falklands.

P. MOHRIOIDES (Bory.) Presl. (The type)—Macl., p. 133 (sub. *Dryopteris*).
Syn. *Aspidium mohrioides* Bory.
Polystichum andinum Christ. (pro max. parte.)

Falkland Is.

P. MOHRIOIDES (Bory) Presl. var. PLICATULUM (Poeppig) C. Chr.
Syn. *Aspidium plicatum* Poeppig.
A. plicatum var. *rigidum* Kee.
Polystichum andinum Philippi.

S. Fuegia, Sierra Valdivieso, South Georgia; West Magellan; Desolation I. in the mountains (alpine).

P. MOHRIOIDES (Bory) Presl. var. ELEGANS (Remy) C. Chr.
Syn. *Polystichum elegans* Remy.
Aspidium plicatum Poeppig, var. *laxum* Kee.
Polystichum mohrioides Christ.
Aspidium mohrioides Hook. fil.

South Patagonia; Skyring Water; W. Patagonia; Terr. Chubut, Cholila.

Add Macl., p. 133:

P. MULTIFIDUM (Mett.) Moore.

Stipes scattered, 15–30 cm., clothed with ovate dark scales; fronds ovate, lanceolate, 50 cm. long, bipinnate, lower pinnæ more than once-pinnate, the lower pinnæ deflexed; pinnules subdeltoid with ovate or spatulate segments. Sori small, scattered.

W. Patagonia, Rio Aysen; also in Chili.

P. MULTIFIDUM (Mitt.) Moore, var. AUTRANI Hicken, Anal. Soc. Cient. Arg., 63 (1907) (reprint of 14).

W. Patagonia, Canal Messier.

P. MULTIFIDUM (Mett.) Moore, var. DUSÉNII, C. Chr. Some Ferns, p. 19.

W. Patagonia, Rio Aysen; S. Patagonia, Skyring Water.

Whether *P. orbiculatum* (Desv.) Gay belongs to our district is rather doubtful. The determination *P. orbiculare* Christ. given in Archiv. för Botanik, Bd. 4, No. 12, p. 2, refers to *P. multifidum* var. *Dusénii* quoted above.

Polystichum vestitum (Forst.) C. Chr.—Macl., p. 133 (*Dryopteris vestita* (Forst.)) does not belong to the Fuegian-Patagonian flora, and should be deleted.

CYSTOPTERIS Bernh. (Macl., p. 133, *Filix.*)

C. FRAGILIS Bernh. (Macl., p. 134.)

The range of this species within our district is evidently wider than Macloskie assigns to it. From Lago Argentino, Lago Viedma and Lago San Martin it is known, and also occurs abundantly in the heart of S. Patagonia near Yotel-Aik, by the Scheuen rivulet; commonly by Rio Carren-leofú (also in Ushuaia and in South Georgia.—G. M.)

BLECHNUM L.

Add Macl., p. 133:

B. AUSTRALE L. forma GENUINA (Hicken).

According to C. Christ. Ind. Fil., *B. australe* and *B. auriculatum* Cav. (syn. *B. hastatum* Kaulf.) are separate species. Mr. Hicken, in his paper "Quelques Fougères Argentines," declares that the character considered to be, above others, of specific importance, viz., the position of the sori, is very varying. The sori have now a marginal position, again they are disposed along the middle nerve, but often enough they have an intermediate position. According to Mr. Hicken, *B. australe*, *B. auriculatum* and *B. trilobum* Presl are all varieties of one species. These varieties are named *genuinum*, *hastatum* and *trilobum*. Only the first of these, characterized by the position of the sori, being close to the middle nerve, belongs to our district.

Having examined numerous specimens of *B. australe* and *B. auriculatum* preserved in the Ricksmuseum in Stockholm I arrived at the opinion that of the varieties set up by Mr. Hicken at least var. *genuinum* and var. *hastatum* represent only extreme forms.

B. AURICULATUM Cav.

W. Patagonia, in its northern section on both sides of the Cordillera.

B. PENNA MARINA (Poir) Kuhn.—Macl., p. 132.

Also in S. Chili and S. Brazil and from here through Patagonia and Fuegia to Cape Horn; in the Falkland Is. too; besides being widely distributed in the southern temperate zone.

The following forms occur in our district; forma *polypodioides* (Desv.) C. Chr. Some Ferns, p. 6. Falkland Is.

B. AUSTRALE (Ktze.) C. Chr., Some Ferns, p. 6.

S. Fuegia; W. Patagonia, viz., in the district of deciduous beeches; also in the bushy steppe of Fuegia and S. Patagonia.

B. TABULARE (Thunb.) Kuhn.—Macl., p. 132.

C. Christiansen, Some Ferns, p. 9, states that the question of identity is not well cleared up between the S. American forms of *Blechnum* generally referred to *B. tabulare* and the genuine *B. tabulare* occurring in S. Africa.

[Under such circumstances Dr. Dusén would eliminate *B. tabulare* from the Patagonian flora and, following C. Christiansen, would adopt *B. magellanicum*, as noted below. — G. M.]

B. MAGELLANICUM (Desv.) Mett. var. SETIGERA (Gaud.) C. Chr.

Falkland Is.

Add Macl., p. 132:

BLECHNUM CHILENSE (Kaulf.) Mett.

Stipes angulatus, sulcatus, robustus, basi squamis angustis, brunneis vestitus; rachis palæaceo-squamosa, squamis caducis, in facie superiore frons oblongo-lanceolata, pinnata, sterilis, pinnis lanceolatis vel lineari-lanceolatis, subarctis, acutiusculis, indistincte arcuatis, basi truncato-subcordatis, subtus ad costam paleaceo-squamosis, squamis caducis, superioribus sessilibus, inferioribus subpedicellatis, marginibus sæpe reflexis, subcartilagineo-serrulatis, præsertim apicem versus, fertilis pinnis linearibus, angustioribus, subtus ad costam paleaceo-squamosis, squamis caducis; indusium laciniatum; spori ovato-angulati, glabri.

W. Patagonia, Chili; its northern section on both sides of the Cordillera, W. Falkland.

Description. — Stipe robust, angulate, covered at the base with narrow scales; frond oblong-lanceolate or linear-lanceolate; pinnæ of the sterile frond linear-lanceolate, acutish, truncate and subcordate at the base, with reflexed margins being subcartilaginous and serrulate towards the end of the pinnæ; pinnæ of the sterile frond linear, narrower than those of the fertile frond; indusium laciniate; spores ovate-angulate, glabrous. D.

Correct Macl , p. 132:

B. MAGELLANICUM (Desv.) Mett.

Fronds oblong, pinnate; sterile pinnæ sessile, adnate, apically subdecurrent, coriaceous, lanceolate, entire, marginally punctate, subacuminate, glabrous, discolored; pinnae of fertile fronds linear, obtuse, indusium fimbriate, scarious, broad, with oval spores which are glabrous, smooth, or scarcely wrinkled.

N. Patagonia; W. Magellan, W. Patagonia, in the region of evergreen beeches. Lago Nahuel-huapi. D.

Add Macl., p. 132:

ASPLENIUM L.

A. TRILOBUM Cav.

(Syn. *Asplenium trapezoides* Sw.)

Folia glaberrima, ad 1 dm. usque alta, plerumque tamen breviora; stipes sæpe fronde 2–3-plo longior, apicem versus compressus, dilatatus; frons triangulari-rhomboidea vel rhomboidea, coriacea, plus minus decurrens, integra vel subtrilobata, ad 4 cm. usque longa et 2.5 cm. lata, marginibus basi integerrima excepta crenulato-dentatis; sori oblique dispositi, crassi, ovali-lineares; indusium latiusculum; spori oblongi, ferruginei submarginati.

W. Patagonia, its northern section in the evergreen forest.

Description. — Leaves glabrous, usually shorter than 1 dm.; stipe generally two or three times longer than the frond, compressed above; frond coriaceous, rhomboid to subtriangular, decurrent, undivided or subtrilobate with margins entire at the basal part, crenate-dentate at the middle and upper part of the frond; sori crass, with oblique position.

Asplenium magellanicum Kaulf. occurs also in North Patagonia by Lago Nahuel-huapi; W. Patagonia, on both sides of the Cordillera.

A. multifidum Brack., Macl., p. 132, must be deleted. It is not found in our district. Besides *A. multifidum* is synonymous with *A. shuttleworthianum* Kee; the last name should be adopted, being older than former. It belongs to the flora of Polynesia. D.

Add Macl., p. 132:

PLEUROSORUS Fée.

P. PAPAVERIFOLIUS (Kze.) Fée.

Folia 3–9. cm. longo, ubique glandulosa; stipes 2–5 cm. altus, strictus vel subflexuosus, basi pallide-virens, medio et superne viridis, apicem versus subcomplanatus; frons oblonge vel elongate triangularis, obtusa, coriacea, in parte superiore pinnata, in parte inferiore bipinnatifida, pinnis segmentisque obovato-cuneatis illis vix incisis, his inciso-dentatis; sori oblongi, demum confluentes; sporangia orbicularia; spori ovales.

S. Patagonia, Lago San Martin in fissures on the rocks. Previously known only from Chili.

Description (of Patagonian specimens). — Leaves 3–9 cm. long, all the surface glandulous; stipe 2-5 cm. tall, strict or slightly undulating, green and flattened above; frond oblong- or elongate-trianguloid, obtuse, coria-

ceous, in the upper part pinnate, in the lower part bipinnatifid, with pinnæ and segments obovate-cuneate, the former scarcely incised, the latter incised-dentate; sori oblong, at last confluent. D.

Add Macl., p. 133:

CHEILANTHES Sw. Lipfern.

Vernation fasciculate, erect or decumbent, acauline, cespitose. Frond bi–tripinnate, rarely once-pinnate, 10–20 cm. long; smooth-pilose, glandular or pruinose. Ultimate segments small, veins forked. Receptacles terminal on the veins, punctiform; indusium reniform, or linear, forming round, oblong, or linear sori.

C. GLAUCA (Cav.) Mett.

Rhizoma repens, squamosum, squamis lanceolatis, brunneis, integris, longissime attenuatis; stipes ad 15 cm. usque altus (in speciminibus patagonicis), validus, rigidus, canaliculatus, atrobrunneus; frons triangularis, glaberrima, 3-pinnata; pinnæ lineares, obtusæ, marginibus reflexis, scariosis, undulatis, integris, indusiformibus; sporangium magnum, ellipticum, annulo latissimo, plano, 20–24-articulato; sporis globosis.

Patagonia, the præandine district of the Chubut Territory; Chili.

Description.—Rhizome creeping, covered with brown, lanceolate scales; stipe (in Patagonian specimens) up to 1.5 dm. tall, rigid, canaliculate, dark brown; frond triangular, glabrous, 3-pinnate; pinnæ linear, obtuse with reflected, scarious, undulating, entire margins; sporangium large, elliptical, with broad annulet; spores globular. D.

Add Macl., p. 133:

PELLÆA Link.

Small 1–3-pinnatifid ferns with sori in the upper part of the free veins or laterally confluent, as if submarginally, with broad thin indusium. Fertile pinnules narrower. Stipes dark-colored, shining.

P. GLAUCA (Presl) Sm.

Stem tufted, 10–20 cm., dark chestnut, shining, naked. Frond 7–10 cm. each way; deltoid, 4-pinnatifid; lowest pinnæ largest, and pinnules on lower side larger, lance-deltoid, and cut; last divisions 3–25 mm., linear-oblong, crenate, tomentose underneath. Involucre coriaceous, rolled down over the sori.

Mexico, — Chili: N. Patagon., Territory of Neuquen. D.

Add Macl., p. 134:

ADIANTUM L. Maiden-hair Fern.

Fruit-dots marginal under the reflexed ends of the delicate lobes of the fronds: sometimes confluent. Stipes slender, black and shining. Segments of frond 1-sided, no distinct midrib.

A. CHILENSE Kaulf.

Stipes (in speciminibus patagonicis 1–2 dm. altus) atque rachis glaberrima, nitens, atro-brunnea; frons ovata vel ovato-lanceolata, 2–3-pinnata; pinnulæ vix coriaceæ, reniformes vel rhomboidales, integræ vel leviter lobatæ, breviter pedicellatæ, steriles denticulatæ; indusia semiorbicularia, scariosa, inter se approximata; sporangia ovata; spori triedri, glabri, lævissimi.

N. Patagonia by Rio Carren-leofú, not rare; S. Patagonia by Lago San Martin, very rare, only a few poor specimens having been noticed here, by Skyring Water; Falkland Is. Chili and Peru.

Description.—Stipe and rachis glabrous, dark brown and shining; frond ovate or ovate-lanceolate, bi–tri-pinnate; pinnulæ scarcely coriaceous, reniform or rhomboid, entire or slightly lobated, very short pedicillate, sterile pinnulæ denticulate; indusium semiorbicular, scarious at the margin; sporangia ovate; spores glabrous. D.

A. SULPHUREUM Kaulf.

Syn. *Asplenium subsulphureum* Remy.

Stipes glaber, atro-brunneus, nitens, ad 2 dm. altus (in speciminibus patagonicis); frons ovalis vel ovali-lanceolata, rachi glaberrima, atro-brunnea, nitente, ad axilla ramorum genuflexa, 2–3-pinnata, pinnis rotundato-reniformibus, pedicellatis, crenatis, in facie superiore viridibus, glabris; in facie inferiore sulphureo-farinosis; indusium semiorbiculare, ad marginem scariosum, subtus sulphureo-farinosum; sporangium rotundatum.

W. Patagonia, in the upper part of the valley of Rio Aysen, on rocks at the height of about 500 m.; Central and South Chili.

Description. — Stipe glabrous, dark brown, shining; frond oval or oval-lanceolate, bi–tri-pinnate; pinnæ rotundate-reniform, pedicellate, crenate, green and glabrous on the upper side, underneath sulphureofarinaceous; indusium semiorbicular, scarious at the margin, underneath sulphureo-farinose; sporangium rotundate.

PTERIS L.

P. SEMIADNATA Phil. in Linnæa, 29 (1857), p. 106.

W. Patagonia, its northernmost section, in the district of evergreen forest; S. Chili.

POLYPODIUM L.

Polypodium australe (R. Br.) Mett. is by C. Chr. Ind. Fil., p. 513, replaced by *P. Billiardierii* (Willd.) C. Chr.

To this species are to be added the following varieties:

Var. MAGELLANICUM (Desv.) C. Chr., Some Ferns, p. 15.

Syn. *Grammitis magellanica* Desv.

W. Patagonia, Otway by Puerto Toro.

Subvar. NANUM (Brack.) Franch. Miss. Cap. Horn, V, p. 397.

Syn. *Grammitis nana* Owack. U. S. Expl. Exp., 16, p. 1; *Polypodium australe nanum* Brack.—Macl., p. 134.

S. Fuegia, also by Lago Cami in the alpine region; supposed by Christiansen to be an alpine form of var. *magellanicum.*

P. PATAGONICUM C. Chr., Some Ferns, p. 15.

W. Patagonia, Rio Aysen.

P. TRILOBUM Cav.

Add Macl., p. 134:

Syn. *P. Synammia* (Fée) C. Chr.

Rhizoma crassa, squamis scariosis, angustis, imbricatis vestitum; stipes glaber, subcomplanatus, ad 1 dm. usque longus, uno latere canaliculatus; frons ovalis vel subrhomboidea, coriacea, glabra, pinnata, pinnis 2–13 oppositis vel suboppositis, discoloribus, lineari-lanceolatis, subacutis, decurrentibus, subhorizontalibus vel oblique dispositis, marginibus cartilagineis, irregulariter et remote crenulatis, summa interdum trilobata vel rare bilobata; sori crasse oblongi; spori ovati, glabri.

N. W. Patagonia, Rio Manso; Central and South Chili; Rio Palena.

Description. — Rhizome crass, covered with narrow, imbricate scales; stipe glabrous, subcompressed, some few to 10 cm. tall; frond ovate or subrhomboid, coriaceous, glabrous, pinnate; pinnæ few to about 13, opposite or nearly so, linear-lanceolate, decurrent, subhorizontal, with cartilaginous margins irregularly and remotely crenate; the uppermost pinna sometimes trilobate or very seldom bilobate; sori crass, oblong; spores ovate, glabrous. D.

Family 4. GLEICHENIACEÆ.

GLEICHENIA Sm.

G. CRYPTOCARPA Hook.—Macl., p. 135.

Also in W. Patagonia, by Rio Manso and Rio Aysen; Canal Messier, Penins. Tayto; Fuegia; Falkland.

G. QUADRIPARTITA Hook.—Macl., p. 135.

Occurs also in W. Patag., and the Guitecas Is.

Family 5. SCHIZÆACEÆ.

SCHIZÆA Sm.

S. FISTULOSA Labill., var. AUSTRALIS (Gaud.) C. Chr., Some Ferns, p. 4.
S. australis Gaud.—Macl., p. 135.

W. Patagonia, Guaitecas Ids. Northernmost section of W. Patagonia; Rio Palena; Falklands; also in S. Chili.

Family 6. EQUISETACEÆ.—Macl., p. 136.

Add Macl., p. 136:

EQUISETUM L. Horsetail.

E. BOGOTENSE H.B.K.

Caules plerumque fasciculati, asperi, transverse rugulosi, profunde 4–9-sulcati, solidi, 6–10 cm. alti (in speciminibus patagonicis), tetragoni vel ad summum 8–9-goni, vage ramosi vel nudi; vaginæ laxæ, ampliatæ, 6–10 mm. longæ, virides, dentibus rufis, membranaceis; rami sparsi vel nulli, plerumque singuli-terni, rarissime 4–5-ni, nunc breves, nunc longi, interdum ramulosi, 4–5-anguli; spica fusca, 8–15 mm. longa, oblonga, obtusa, interdum brevi-apiculata; stomata numerosa, phaneropora, in valleculis unam seriem latissimam formantia.

N. Patagonia, common by Rio Carren-leofú; W. Patagonia, Rio Aysen abundant in sandy places, N. W. Patagonia, Rio Manso.

Description.—Stems usually fasciculate, scaberulous, transversely rugose, deeply 4–9-sulcate, solid, 6–10 cm. tall (of Patagonian specimens), quadrangular or at the most octagonal or enneagonal, more or less regularly branched or unbranched; sheaths lax, tumid, 6–10 mm. long, green, with ferruginous membranaceous teeth; branches sparse or none, usually single to three, very seldom quaternate to quinary, short or long, sometimes bearing branchlets, quadrangular to pentagonal; spike fuscous, 8–15 mm. long, oblong, obtuse, sometimes, shortly apiculate; stomata numerous, phaneroporus, in a single, broad row at the bottom of the furrows. D.

Add Macl., p. 136:

EQUISETUM FLUVIATILE L. var. LIMOSUM (L.).

Stems all similar; sheaths appressed with about 18 short brown teeth. Branches usually 10–30, furrowed. Central cavity very large, branches and roots also hollow.

Eurasia, Europe, and N. America; N. Patagonia, at the confluence of the Rio Limay and Rio Neuquen. Fide Spegazzini.

E. FLUVIATILE L. var. LIMOSUM (L.) forma ULIGINOSUM (Mühlenb.).

N. Patagonia, by Rio Carren-leofú. (According to Spegazzini.)

E. RAMOSISSIMUM Desf.—Macl., p. 136.

N. Patagonia, near Carmen de Patagones; Central Patagonia, by Rio Chubut, according to Spegazzini.

Add to Macl., p. 137:

Family 7. LYCOPODIACEÆ. Club-moss.

LYCOPODIUM CHONOTICUM Phil.

Creeping, leaves 4-ranked, acute, thick; spikes ending the short branches, paired, erect; bracts appressed, scutellate; sporangia reniform, inserted on the pedicel of the bracts.

L. clavatum L. var. *fastigiatum* Hook. (Macl., p. 137) is probably identical with *L. magellanicum.* There is in our district a form or variety of *L. magellanicum* worthy of mention. It is distinguished by more distant, not fastigiate, branchlets and less densely attached leaves. This form is noticed near Lago Buenos Aires and in the Chonos Archipelago.

And *L. clavatum magellanicum* Hook.—Macl., p. 137. The Magellanian-Fuegian plants so named do not belong to *L. clavatum* Linn. but to another species, viz., *L. magellanicum* Sw. (of the same subgenus) of our district. Has the habit of *Lycopodium jussieui* Desv. but differs by its narrower, longer leaves attenuate from the base, straight or not distinctly curvate, not rotundate; differs also by having less membranous stipules. D.

Page 137: *Lycopodium confertum* Willd. occurs at Lago Nahuel-huapi, North Patagonia.

L. GAYANUM Desv.

Mature spike cylindraceous, subclavate (15 mm. by 4 mm.), subsessile or long-pediceled; pedicels terete with bracts linear, acute, appressed, multifarious. By the presence of "stipules" easily distinguished. Chili; N. Patagonia by Lago Nahuel-huapi.

L. MAGELLANICUM (Beauvois) Swartz.

Stem creeping, branches suberect; leaves scattered, imbricate, linear-lanceolate; spikes peduncled; scales of spike membranously margined, undulate. S. Patagonia, Lago San Martin, in the mountains; Magellan Strait; Fuegia; Falkland Ids.; South Georgia; Auckland I.; Campbell's I.

L. MAGELLANICUM Sw. var. CUNNINGHAMII Bak.

Differt a typo spicis elongatis, ad 10 cm. usque longis.

Magellan; Falkland Ids.

L. NAVICULATUM Desv.

Stem creeping; branches erect, dichotomous; leaves linear, subquadrifarious, subacute; peduncles dichotomously branching; scales apically reflexed.

N. Patag., Territory of Neuquen; also in Brazil, Serra do Itatiaia.

L. PANICULATUM Desv.

In Encycl. Methodique called "*Polypodium* with 4 divisions"; and described as "Frond 4-parted, bipinnate; pinnæ pinnatifid; pinnules entire, acute, glabrous; stipe forked above.

N. Patagon., Territory of Neuquen.

L. SAURURUS Lam.—Macl., p. 138.

(Sub *L. saururus* Willd.)

Is to be deleted. Not found in our district, not even in the Falkland Ids.

Macl., p. 138:

LYCOPODIUM SELAGO Linn.

Stems erect, dichotomous, forming a level top; spore-cases in axils of the ordinary dark-green, shining, 8-ranked leaves of its summit.

Falkland Is. (var.). (See Flora Antarctica, II, p. 394.)

Note.—Philippi has described *Lycopodium chonoticum* from the Chonos Archipelago—see Linnæa, Bd. 29, p. 108—and compared it with *Lycopodium paniculatum* Remy. Philippi's diagnosis is short and agrees well with the description of *L. paniculatum* with the exception of the number of spikes which are geminate in *L. chonoticum.* Philippi's species represents, perhaps, only a variety of *L. paniculatum.*

Having seen no specimen of *L. chonoticum* I prefer to draw attention to the possible occurrence of *L. selago* L. a species or variety of a species of *Lycopodium* in our district. (P. D.)

Lycopodium selago is northern, especially European, an isophyte, rejoicing in temperate climates, and surroundings. Some of its varieties are subantarctic; the *L. selago* var. *Aschersonii* is domesticated in the Falkland Is.

PHANEROGAMIA.

Family 1. PINACEÆ.—Macl., p. 140.

Araucaria has diœcious flowers, and the pollen not winged. *A. imbricata* has edible seeds.

N. B. *Araucaria imbricata* Pav.—Macl., p. 141, never occurs along with *Fitzroya patagonica* Hook. fil. Araucaria forests are met with in the coast Cordillera up to a height of about 1,500 m. and in the Cordillera up to 1,800 m. In S. Chili, to the south of 34° 30′ lat.; N. Patagonia to 45° 30′ lat., principally on the eastern slopes of the Cordillera, also along the uppermost rivers forming gallery-forest; is also distributed on the west side of the Cordillera, viz., in the uppermost section of the evergreen forest.

Add Macl., p. 142:

LIBOCEDRUS CHILENSIS Endl.

Branches spreading, terete; branchlets compressed, 2-edged; leaves quadrifariously imbricate; the laterals complicate-carinate, decurrent, two glaucescent sulci; fascials very small, ovate, carinate. Strobile nutant, ovate-oblong; valves alternate, all with dark, subapical, tuberculiform spines.

N. Patagonia, the Neuquen Territory, by Lago Nahuel-huapi, along the upper part of the Rio Limay; by Rio Carren-leofú; Central Patagonia, in the pre-andine region of the Chubut Territory. D.

Libocedrus tetragona Endl.—Macl., p. 12, occurs also in Chili.

Podocarpus nubigenus Lindl.—Macl., p. 143, is found in W. Patagonia by Trinidad Channel, its southernmost limit so far as presently known.

Dacrydium Fonckii (Phil.) Benth.—Macl., p. 144, is known from S. Chili, viz., in the table-land of the Valdivian coast Cordillera, from the Guaitecas Islands and W. Patagonia, the district of evergreen forest (the southern limit of the distribution of the plant is 52° 30′, according to Skottsberg).

Family 3. Taxaceæ.

Add Macl., p. 143:

Podocarpus andina Poepp.

Arbor parvus aut mediocris, 3–6 m. altus; ramuli foliis distichis, anguste linearibus, apice basique obtuse acutis, in facie inferiore glaucis, c. 25 mm. longis et 3 mm. latis, coriaceis, marginibus minutissime revolutis; spicæ alternæ, paucæ, in axillis foliorum supremorum dispositæ, demum deflexæ, foliis vix superantes; drupa in apice disci sessilis, globosa, viridis, unilocularis, monosperma; semen globosum.

N. Patagonia, Lago Nahuel-huapi; W. Patagonia, Rio Aysen. (According to Spegazzini.)

Family 4. Gnetaceæ.—Macl., p. 144.

EPHEDRA L.

Add Macl., p. 144:

Ephedra, Key to the Species.

*A*1. Internodes long, about 5 cm.; female catkins with 5 pairs of imbricating scales; sheath seg, ments 3, acuminate; 4 sessile staminal segments at each node. *ochreata.*

*A*2. Internodes about 3 cm.; female catkins 2-flowered. Leaves and branches mostly opposite.

  b. Subscandent. Sheath-segments short, acuminate with a long seta. Anthers 3(–5) scarcely exsert. *tweediana.*

  *b*2. Branches slender, erect. Sheath-segments long, acuminate-subulate. Anthers 5–7 on a column. *americana.*

*A*3. Plants dwarf, 10 cm. high; internodes about 1 cm. long. Female catkins 4-flowered, each sheathed at base. Sheathed-segments short, ovate.

b. Anthers 5. Internodes 12 mm. *frustillata.*[1]

b2. Anthers 3–4. Internodes 9 mm. *patagonica.*[1]

A4. Diœcious shrub. Sheath bifid, partly ending in a subulate leaf. Male catkins solitary at joints. *andina.*

Add Macl., p. 145:

EPHEDRA ANDINA (Poepp.) Stapf.

Diœcious branching shrub, erect or climbing, branches tuberculate sheaths bifid, segments ending in a short subulate leaf. Male catkins mostly solitary at the joints; anthers 5–4, subsessile, common stipe with a longer involucel. Female catkins 1 or 3, ovate oblong, 2-flowered, scarious margined, involucres 3–5, bifid. Fruits oblong, dorsally convex; white or red.

N. Patagon.; Territory of Neuquen. Peru. D.

Add Macl., pp. 144, 145:

E. AMERICANA H. & B.

Mid-sized tree, branches erect or spreading, with crowded leaves; upper branches subdistichous, thick, rigid; leaves linear, acute, mucronate; the upper leaves rather obtuse, sessile, strictly decurrent, marginally yellowish. Male catkins numerous, short, sessile, spreading; thick, or oblong-cylindric, near ends of branches; antheriferous bracts broad-ovate, acute. Fruits few in a spike, oval-globose, apiculate. Leaves 15–28 mm. by 2 mm.

S. Chili.

E. AMERICANA H. & B. var. HUMBOLDTII Stapf. Gatt. Ephedra, p. 85.

N. Patagonia, by the lower part of Rio Negro; the Cordillera of Ecuador, Peru, Bolivia and Argentina.

E. AMERICANA H. & B. var. RUPESTRIS Stapf. Gatt. Ephedra, p. 86.

Add Macl., p. 145:

E. NANA Dus. in Gefässpfl. Magellan., p. 235, Taf. XI, Fig. 1–8.

E. Fuegia in the steppe, but very rare; South Patagonia, common in the steppe near the Atlantic Coast, sometimes abundantly, besides here and there even in the western parts of the steppe.

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[1] Are these distinct?

My knowledge of the species of this genus is, from want of material, very incomplete. I am not so fortunate as to have at hand the paper of Stapf entitled "Die Arten der Gattung Ephedra." But I may add, *E. americana* var. *Humboldtii*, as already inserted; see supra. Also *E. nana* Dus. should be added. In 1908 Dr. Stapf informed me that *E. nana* is probably identical with *E. americana* var. *rupestris;* but recently Dr. Skottsberg has informed me that Dr. Stapf has changed his opinion and is now inclined to accept *E. nana* as an independent species. *Ephedra tweediana* is probably to be deleted. D.

Family 6. POTAMOGETONACEÆ.—Macl., p. 147.

Add Macl., p. 147, l. 15 from foot, the diagnosis:

Ruppia maritima L., marine submersed herbs, with linear-capillary leaves, from whose sheathing base the forked capillary stems proceed, bearing naked, 2-staminate flowers, and 4 small sessile drupes. Magellan, at Punta Arenas.

Add Macl., p. 148:

POTAMOGETON STRIATUS Ruiz et Pav. (1798).
(*P. australis* F. Philippi.)

Stems long, branching, flattened (in nature?). Upper leaves spuriously opposite, linear, 8 cm. long, 2 mm. broad; the lower often broader, sheathing at base, acute at apex, 3-nerved. Ligules oblong-linear, evanescent. Peduncles 2–3 cm. Spike 8–10-flowered, contiguous. Fruit elliptical, 3 mm. long, dorsally thick, not keeled.

Trop. S. Amer.; Patagonia.

Macloskie gives considerably more species than actually occur in Patagonia, and some of them may be dismissed at once, for instance *P. crispus*, *P. Friesii* and *P. interruptus*. *P. Friesii*, it is true, Macloskie states to have been collected by Hatcher at Rio Coy, but his specimens most certainly do not belong to this species.

Macl., p. 149: *P. juncifolius* should, likewise, be struck out. In consequence of Hagström's definition of this species, I admitted it into my work "Die Gefässpflanzen der Magellansländer" but Hagström himself has changed his opinion and now considers the specimens collected to represent a new species, *P. magellanicus* Hagstr. Later still, he has found this determination not to hold good, and now thinks the specimens in question to belong to a hybrid between *P. pectinatus* L. and *P. filiformis* Pers. (cf. Engler, Das Pflanzenreich, IV. 11, Ascherson und Graebner, *Potamogetonaceæ*).

Possibly *P. natans* L., Macl., p. 149, also is to be classified among species to be deleted. In my work above referred to I provisionally admitted it, but in a later work. "Zur Kenntnis der Gefässpflanzen des südlichen Patagoniens" I have insisted that the specimen is probably *P. linguatus* Hagstr., not *P. natans.* Certainly, at present, no final judgment can be passed on this subject. D.

Macl., p. 149, line 4 from below, for "alternate" read "attenuate." The embryo of *Potamogeton pectinatus* is spirally curved.

Fam. 8. ALISMATACEÆ. Macl., p. 152.

Add the species *Sagittaria chilensis* Cham. et Schlecht. Pflanzenreich, Alism., p. 43. Leaves sagittate, with rough margins; anthers linear, yellow; filaments short, broad, glabrous.

N. W. Patagonia, lower part of Rio Puelo; Chili.

Macl., p. 153, middle of page, spell sic, *S. montevidensis.*

Fam. 9. HYDROCHARITACEÆ.—Macl., p. 153.

Vallisneria spiralis L. is to be deleted, not being known from our district.

According to Macloskie, young specimens of this species were collected by Hatcher at Rio Chico. But my examination of the specimens would refer them rather to the genus *Juncus.* The young condition of the specimens precludes a specific determination.

Family 10. GRAMINEÆ.—Macl., p. 161.

ANDROPOGON L.

A. consanguineus Kunth. should be named *A. consanguineus* Kunth. var. *typicus* Hack.

PASPALUM L.—Macl., p. 162.

P. leucophæum H.B.K. is only a synonym of *Panicum insulare* (L.) Mey. var. *typicum.*

ANTHÆNANTIA Beauv.

Macl., p. 163: *Anthænantia lanata* Benth. should be deleted, the species so far as I know, not having been found in Patagonia. D.

Add Macl., p. 146:

PANICUM LANATUM Swartz.

Culm 120 cm., branching, jointed. Leaves 15 cm., ovate-lanceolate, mucronate, with rough woolly sheaths. Panicle compound, 15 cm., its rays spreading, flexuose; spikelets with capillary pedicels. Outer glume half as long as the inner, villous. Valves ovate, pale.

Falkland Is.; Jamaica. D.

Panicum chloroleucum Gris., Macl., p. 164, should be deleted, being a synonym of *P. urvilleanum* Kunth.

Add Macl., p. 164:

Panicum insulare (L.) Mey. var. *typicum*. (Syn. *Paspalum leucophæum* H.B.K. in Macl., p. 162.) N. Patagonia, in the vicinity of Carmen de Patagones.

P. urvilleanum Kunth. is also stated (Macl., p. 164) to occur in the Falkland Islands; perhaps a mistake.

P. MAGELLANICUM Lam.—Macl., p. 164.

Probably all the species of *Panicum* in this region should be deleted. It is quite probable that no species of that genus occurs in the southern part of the district, and that some mistake occurred, in which a plant collected in a warmer part of the globe was substituted; such a supposition will explain the fact that the plant was never recovered again from this region. D.

SETARIA Beauv.—Macl., p. 164.

S. CAUDATA (L.) Beauv.

This species, though closely allied to *S. setosa* Beauv., is by no means identical with it. (Nor is *S. setosa* known to occur in our district, notwithstanding Macl., p. 165.)

PHALARIS L.—Macl., pp. 167, 168.

Add *Phalaris canariensis* Linn. Leaves lanceolate; nodes glabrous, the sheaths rough above. Panicle ovate, 4 cm. long; pedicels very short. Glumes navicular, entire, 3-nerved.

Patagonia, Santa Cruz Emporium, introduced.

ANTHOXANTHUM L.

A. ODORATUM L.—Macl., p. 166.

The species is noticed in the Falkland Is., as introduced.

HIEROCHLOË Gmel.

H. arenaria Steud., Macl., p. 167, is to be deleted, being identical with *Hierochloë redolens* (Forst.) R. Br.

Add Macl., p. 167:

H. PUSILLA Hack.

Hackel in Dusén, Neue Pflanz. Patag., p. 4, Taf. 1, Fig. 1 and Taf. 7, Fig. 1.

Rhizoma repens, stoloniferum; culmi 3–4 cm. alti, robusti, teretes, retrorsum pubescentes, specie enodes; folia in basi culmi dense aggregata, patentia, glabra; vaginæ inferiores breves, summa vero 2 cm. longa, ventricosa, lamina mucroniformi terminata, infimæ emortuæ fuscæ culmi basin dense cingentes atque tumefacientes; ligula brevissima, truncata; laminæ lineares, apice cucullato-obtusæ, planæ vel siccitate complicatæ, ad 2.5 cm. longæ, explicatæ 2 mm. latæ, rigidæ, læves, nervis paucis crassiusculis supra prominentibus percursæ; spiculæ 5–7 in racemum subsimplicem, brevem (ad 1.5 cm. longum) densum confertæ, imbricatæ, breviter pedicellatæ, pedicellis rachique communi glaberrimis, ovatæ, brunnescentes, 5 mm. longæ: glumæ I et II æquales, spiculæ longitudinem æquantes, late ovatæ, acutæ, tenuiter 3-nerves, nervis lateralibus brevibus, tenuiter membranaceæ, albidæ, glaberrimæ; III et IV spiculam subæquantes (4.5 mm. longæ), late ovales, cymbiformes, apice hyalino, albido, obtuso, emarginato vel (in glum. IV) integro, subrecurvo, ceterum chartaceæ, brunnescentes, scabræ, 7-nerves, omnino muticæ, paleam eius longitudinem·æquantem multo angustiorem binervem floremque ♂ triandrum foventes; gluma V (fertilis) 3.5 mm. longa, ovalis, obtusa, fusiformi-involuta, coriaceo-chartacea, glabra, nitens, brunnea, subenervis; palea eam æquans, late oblonga, binervis; stamina 3, antheris (an semper?) effœtis; ovarium oblongum, stigmatibus ex apice glumæ longe exsertis.

North of Lago San Martin by Rio Fósiles associated with *Bolax gummifera* (Lam.) Spreng.; alt. c. 1,000 m.

Description.—Rhizome creeping, stoloniferous; culms 3–4 cm. high, retrorse-pubescent; leaves patent, smooth, aggregate at the base of the culm; lower sheaths short, uppermost ones 2 cm. long with a mucronate blade; ligule very short, truncate; leaf-blades linear, rigid, smooth, dry complicate with few nerves; spikelets 5–7, ovate, with short pedicels, imbricately jointed to a dense subsimple panicle; pedicels and rachis smooth; glumes (I and II) as long as the spikelet, broad-ovate, acute, smooth, 3-nerved; floral glumes (III and IV) nearly as long as the spikelet, broad ovate, scabrous, 7-nerved, enclosing a narrow, 2-nerved palea and 3-androus flower; fertile glumes (V) shorter than the spikelet, oval, obtuse, smooth, almost nerveless; palea of the same length, broad oblong, 2-nerved.

Very near to *H. pauciflora* R. Br. The last mentioned differs, however, from the present species by its smooth culm, by the short glumes (the first and second are a little shorter than the third and fourth, in *H. pusilla*, on the other side, being longer) by the floral glumes (the third and fourth being a little hairy at their margin but not at the apex), the fourth one having, besides, a short awn below the emarginate apex. D.

ARISTIDA L.

A. DIFFUSA Trin. et Rupr. and A. SETIFOLIA H.B.K.—Macl., p. 168. Not found in Patagonia; both species should be deleted.

STIPA L.

S. CHUBUTENSIS Speg.

Awn several times longer than floret, villous in lower part, glumes as long as the pappus and lower joint of the awn. Leaves convolute, glabrous, rigid. Culms much longer than leaves; nodes naked, black pubescent; panicle closely infolded in the upper spathe-like sheaths.

E. Patagonia, Puerto San Antonio in drift-sand fields; Central Patagonia, the Chubut Territory by Teka-choique.

Add Macl., p. 171:

S. HUMILIS Cav.

Cespitose, 10–16 cm., glabrous. Upper sheath ventricose, about a short, dense panicle. Glume acute, thrice as long as flower. Awn near the base, straight, with white hairs to the joint, thence pinnated.

S. Patagonia (not in Magellan), certainly also in Central Patagonia, from the east coast to the eastern slopes of the Cordillera, very often abundant.

A low grass growing in small, dense tufts, very common, especially in the western part of its range, where, alone or associated with a few other, sparingly occurring plants, it occupies the vast drift-sand fields at the middle and eastern parts of the great lakes.

According to O. Kuntze, Rev. III², p. 371, Vahl was the first to describe *S. humilis*, and this statement has induced both Spegazzini and Macloskie to assign to Vahl the origination of this species, but for this there is no reason at all, as Vahl has not described *S. humilis*. O. Kuntze cites Vahl's Icones tab. 466, but this work of Vahl's only contains a few tables. Neither does the table referred to, with a reproduction of *S. humilis*, occur in the above work of Vahl's, but is found in Cavanille's "Icones Plantarum," and, accordingly, Cavanille should be quoted as the author of *S. humilis*. D.

STIPA LIGULARIS (Gris.) Speg.—Macl., p. 173.

Any Patagonian habitat for this species I am not aware of and, in the literature, can find no statement of its being seen as far south as Rio Colorado. Its range as given by Spegazzini rather tends to confirm than contradict my supposition that it does not reach the limits of North Patagonia. It may, therefore, be safer not to count it as belonging to the Patagonian flora just yet.

Add Macl., p. 173:

S. MUCRONATA H.B.K.

Erect, 30 cm., ligules long. Panicle simple, 15 cm., subsecund, verticillate. Glumes acuminate, slightly exceeding the pilose palea; awn pilose. Leaves convolute, smooth.

N. Patagonia, by Lago Nahuel-huapi. Collected by Dr. Buchtien and new for Patagonia. Occurs northwards to Mexico.

S. SPECIOSA Trin. et Rupr. subsp. CHRYSOPHYLLA (Desv.)

Syn. *S. chrysophylla* Desv.

Macloskie has placed *Stipa chrysophylla* Desv. as synonymous with *Stipa speciosa* — Macl., p. 175 — while Desvaux and Spegazzini take up both as independent species. These species certainly do not exactly coincide, but, on the other hand, are scarcely specifically distinct, as the descriptions of them given by Spegazzini in his explanation of the *Stipeæ Platenses* seem to show. It is, in my opinion, more correct to place *S. chrysophylla* as a subspecies of *S. speciosa*.

Hackel has confirmed my opinion and states that the two forms cannot be brought together as identical, the differences in size of the spikelets and the awns as well as of the coloration of the lower part of the sheaths separating them.

I avail myself of this opportunity of correcting an error in a previous work of mine, "Die Gefässpflanzen der Magellansländer." My statement about *Stipa chrysophylla* Desv. having been found in the district between Lago Argentino and Ultima Esperanza is erroneous and refers to *Stipa pogonathera* Desv.

S. speciosa occurs in N. Patagonia, by Lago Nahuel-huapi and northwards to Mendoza, the subsp. *chrysophylla* also in N. Patagonia, Neuquen Territory, and northwards to Atacama.

S. TENUIS Phil.—Macl., p. 176.

Macloskie states *Stipa argentina* Speg. to be synonymous with this species. The author himself being of opinion that it should be considered a variety of the same, we may let it remain as such for the present. It should be pointed out, though, that the difference between the species and the variety is very slight. Any specimens of the latter I have not had at hand.

Stipa tenuis Phil. var. *argentina* (Speg.) does not occur in our district.

Add Macl., p. 174:

S. HIRTIFLORA Hack. in Dusén, Neue Gefässpfl. Patag., p. 5, Taf. 3, Fig. 7, and Taf. 7, Figs. 4–5.

Perennis, cæspitosa, innovationibus extravaginalibus; culmi erecti, teretes, glaberrimi, ad 50 cm. alti, 3-nodes, nodo summo supra medio culmi sito, apice breviter nudo; vaginæ teretes, arctæ, internodiis breviores, glaberrimæ, imæ squamiformes, emortuæ dilute fuscescentes, diu persistentes; ligulæ brevissimæ, truncatæ, ciliolatæ; laminæ anguste lineares, convolutæ, junceæ, acutæ, inferiores ad 20 cm. longæ, summa 3–4 cm. longa, complicatæ diametro 1 mm. erectæ, rigidæ, glauco-virides, glaberrimæ, intus costis approximatis percursæ; panicula linearis, contracta, laxa, 12–15 cm. longa, ramis paucis, ad racheos nodos binis erectis, filiformibus, hirtellis, primario inferiore c.5 cm. longo, bispiculato, in ½ inferiore nudo, secundariis unispiculatis, spiculis laxe subæqualiterque dispositis, subterminalibus, brevissime pedicellatis; spiculæ lineari-lanceolatæ, c. 11 mm. longæ, ex albo-viridulo et livide violaceo-variegatæ; glumæ steriles subæquales (I 10 mm., II 11 mm. longæ), lanceolatæ, acutissimæ, 5-nerves (in I nervi extimi brevissimi), in ½ inferiore dorsi violaceæ, ceterum albo-viridulæ, tenui-membranaceæ, nervo medio scabro; gluma fertilis lineari-oblonga, 7–8 mm. longa, callo obtuso, 0.7 mm. longo, breviter barbulata, livide viridula, tota pilis erecto-patulis, griseo-albis, c. 1 mm. longis, versus margines densioribus hirtula, in aristam continuo abiens, apice sine corona, arista 2.5 cm. longa, rigidula, paullo infra medium geniculata, columna subflexuosa, basi eodem modo ac gluma hirsuta, pilis sursum decrescentibus, seta glabra, scabra; palea glumam æquans, oblonga, acutiuscula, convoluta, dorso pilis parvis adsperso, apice barbata; antheræ 4 mm. longæ, apice barbulatæ.

Description.—Perennial, cespitose, with extravaginal innovations; culms cylindrical, glabrous, up to 50 cm. tall, 3-nodose, the uppermost node above the middle of the culm; sheaths shorter than the internodes, glabrous, the lowest squamiform; ligules very short, truncate, ciliate; leaf-blades narrow, linear, convolute, junciform, acute, the lowest ones up to 20 cm. long, rigid, glaucescent, glabrous, densely nerved on their upper side; panicle linear, contracted, lax, 12–15 cm. long; rachis at the nodes 2-pedicelliferous, pedicels erect, filiform, puberulous, the lowest ones about 5 cm. long, 2-spiculate, the other ones 1-spiculate, spikelets laxly disposed, the uppermost ones very short pedicellate; spikelets linear-lanceolate, about 11 mm. long, light-green to garter-blue variegated; sterile glumes subequal (I 10 mm., II 11 mm. long) lanceolate, in the lower half, part violet on the back, else light green, thinly membranaceous, medial nerve scabrous; fertile glume linear-oblong, 7–8 mm. long, livid pale green, hirtellous all over, with shortly barbulate, obtuse callus 0.7 mm. long; crown none; awn 2.5 cm. long, rigidulous, genuflect a little below the middle, lower part twisted, hirsute at the base like the glumes, hairs gradually shortening upwards, seta scabrous; palea as long as the glume, oblong, acutish, convolute, covered with small and sparse hairs on the back; stamens 4 mm. long, barbulate at the top.

The present species is not very much akin to the American species of the same genus, but stands close to *Stipa sibirica* Lam. The last differs from *S. hirtiflora* by longer, broader, usually plane, scabrous leaves, by denser panicle richer in flowers and with 3–5 rays at the nodes of the rachis, by 3-nerved empty glumes, about 8 mm. long and floral glumes of the same length and by awn being glabrous or at the most scabrous-puberulous at the base, but never covered with long hairs. D.

Add Macl., p. 172:

STIPA IBARI Phil.

Also in E. Patagonia; Puerto Mazaredo.

S. Patagonia in the Pelque valley, in grassy places, very rare; Lago Argentino at the border of the forest; near Lago Viedma in thin forests up to the height of about 400 m.

S. VAGINATA Phil.—Macl., p. 177.

The species is identical with *S. speciosa* Trin. et Rupr. and must, therefore, be deleted.

MUHLENBERGIA Schreber.

M. RARIFLORA Hook. fil.—Macl., p. 178.

Should be deleted. It belongs to the genus *Stipa* and is to be found there—see Macl., p. 175.

Macl., p. 179, line 8, for Cobo read Cabo.

PHLEUM L.—Macl., p. 179.

P. ALPINUM L. var. COMMUTATUM (Gaud.) Koch. Aschers. und Graeb. Syn. Mitt. Flor., Bd. 2, p. 145.

Cabo Negro, Patagonia; S. Fuegia, Ushuaia; South Georgia.

Macl., p. 179:

P. PRATENSE L. Timothy Grass.

Also in Falkland Islands by Port Stanley. Introduced.

ALOPECURUS L.—Macl., p. 179.

A. ALPINUS Sm. var. ANTARCTICUS (Vahl).

Syn. *A. antarcticus* Vahl; *A. magellanicus* Lam.

There is, in fact, very little difference between *A. alpinus* Sm. and *A. antarcticus* Vahl, as E. Hackel informs me. The last mentioned usually is higher (1 m. or still more) and has much longer awn than the former. Its spike varies in length and thickness and the color of the glumes is also varying. The *A. alpinus* itself sometimes attains a considerable height. The only character of any importance separating them is the much longer awn of the glumes in *A. antarcticus*. This difference, however, scarcely gives sufficient reason for separating them specifically. *A. antarcticus*, therefore, may be placed as a variety of *A. alpinus*.

Add Macl., p. 179:

A. ALPINUS Sm. var. ANTARCTICUS (Vahl) f. LECHLERI (Steud.).

Syn. *Alopecurus Lechleri* Steud. Syn. Glum., I, p. 148.

It is, in my opinion, impossible to separate, at least specifically, *A. Lechleri* Steud. and *A. alpinus* Sm. I have had the opportunity of examining two specimens of the first mentioned collected at Valdivia or not far from there. The one has the upper part of the culm naked; in the other the culm is sheathed quite up to the spike. Other differences do not exist. Both specimens are characterized by narrow, subconvolute and subpungent upper leaves and very small spike. The same form was observed by me in the beech forests by Lago Argentino, Lago Viedma and Lago San Martin and probably occurs in the whole district of *A. alpinus* var. *antarcticus.*

The two specimens now in question belong to the collection of Chilian plants made by W. Lechler and distributed by R. F. Hohenacker. The one (No. 440) is determined as *A. Lechleri* Steud., while the other (No. 532) is labelled *A. alpinus* Sm. They represent, however, evidently only one form standing very near to *A. alpinus* var. *antarcticus* and differing merely by its comparatively small spike and upper leaves being subconvolute, subpungent and narrower than in the var. of *A. alpinus* Sm. In my opinion the present plant represents only a form of *A. alpinus* var. *antarcticus;* it occurs in the forest district of S. Chili and probably of the whole of W. Patagonia, but scarcely outside the forest. D.

Add Macl., p. 179:

ALOPECURUS FULVUS Sm.

A. geniculatus Linn. but with awn from base or middle of inner valve; stem ascending, knee-jointed; thyrse compound-cylindrical; glumes obtuse; anthers orange-colored.

S. Patagonia, by Lago Argentino on shores of freshwater lagoons. Skottsberg regards *A. geniculatus* L. as a synonym of *A. alpinus* Sm. D.

A. ANTARCTICUS Vahl.

Syn. *A. magellanicus* Lam. *A. alpiuus* Sm., var. *aristatus* Hook. fil.

In my explanation of the Fuegian and Magellan vegetation, "Die Gefässpflanzen der Magellansländer," I have brought together *A. alpinus* Sm. and *A. antarcticus* Vahl., under the name of *A. alpinus*, but for this there was, in fact, no very good reason. The specific name *antarcticus* is older than *alpinus*, and, besides this, there is really a certain small difference between these two, the awns being much larger in *A. antarcticus* than in *A. alpinus.* I therefore think it will be more correct to note the latter as a variety of the former. Macloskie separates them, and also names *A. antarcticus* var. *alpinus* (*A. alpinus* Sm.); but *A. antarcticus* var. *alpinus* (*A. alpinus* Sm.) is an arctic plant and not known from S. America, and should therefore be eliminated from his explanation. D.

Yesterday when visiting (June 30, 1913) Upsala I called Skottsberg's attention to his opinion about *Alopecurus fulvus*, *geniculatus*, and *alpinus*, but he ultimately expressed himself as agreeing with what I had written. D.

Alopecurus antarcticus Vahl. (Macl., p. 179) is the right name, *A. magellanicus* and *A. alpinus* v. *aristatus* Hook. fil. being synonyms.

Alopecurus Lechleri Steud. Mel., p. 180, is undoubtedly only a form of *A. antarcticus.* Skottsberg does not regard *A. geniculatus* L. as merely a synonym of *A. alpinus* Sm.

A. FULVUS Sm. f. VIOLACEA Hack.

Differt a typo spiculis violascentibus.

S. Patagonia, in the upper valley of Rio Gallegos (Dusén).

SPOROBOLUS R. Br.

Macl., p. 180:

S. ARUNDINACEUS Gray.

Should be transferred to the next genus.

S. INDICUS R. Br.—Macl., p. 181.

This species is not known from Patagonia and, consequently, should be deleted.

Genus EPICAMPES Presl.

Spikelets small, 1-flowered; flowering glume scarcely shorter than the empty glume; the awns minute, subterminal, slender. Rachilla not produced beyond the flower. Panicle long and dense. Tall, large canes.

E. ARUNDINACEUS (Gray) Hack.

Described sub *Sporobolus.*

N. and E. Patagonia; and in N. Argentina.

POLYPOGON Desf.

Macl., p. 181: *Polypogon elongatior* H.B.K. Occurs in North Patagonia, Territory of Neuquen.

Add *Polypogon interruptus* H.B.K. var. *crinitus* (Trin.) Hack. (*P. crinitus* Trin.).

Culm erect simple, glabrous, nearly 30 cm. Leaves linear, scabrous; sheaths globose; ligules obtuse, ovate. Panicles spike-like, 5 cm., interrupted by spreading scabrid short branches. Glumes obtuse, subequal, purplish awned by a long seta. Valvules half as long as glume, subequal, the lower larger and awned, the upper smaller, and awnless.

Orinoco (the type). S. Patagonia in the vicinity of the emporium of Sta. Cruz, Lago Argentino and Lago Viedma; W. Patagonia, by Rio Aysen; NW. Patagonia, by Rio Manso.

AGROSTIS L.

A. ABERRANS Steud.—Macl., p. 184.

Syn. *A. flavidula* Steud.

A. aberrans and *A. flavidula* are represented by one specimen each in Herbarium Stockholmiense emanating from W. Lechler *Plantæ Magellanicæ* in which collection *A. aberrans* is numbered 1219 and *A. flavidula* 1225, the very same numbers referred to in Steudel's description of the species—Steud. Syn. Glum., I, pp. 421 and 422. Both species have the same habit, which induced me to examine them more closely.

The specimen of *A. flavidula* is a couple of straw-colored individuals, evidently taken at the close of the vegetating season. That of *A. aberrans* is a single one, in size and proportions analogous to the former, but with fully open blades, whilst those of *A. flavidula* are conduplicate. In addition there are two panicles of the very considerable length of 16 cm., the same size that is given in the description.

A. flavidula, Steudel says, has "valvula solitaria." This does not tally with the specimen examined by me, which must be taken to represent Steudel's species. All flowers examined by me had a rounded, diminutive palea (valvula superior).

In Steudel's description of *A. aberrans* there is the following very inexplicit clause: "valvulis subæqualibus . . . (quandoque exteriore abbreviata)." My examination, however, of the specimen in question shows the flowers to be entirely like those of *A. flavidula*, and the floral glume papilliferous. In other respects, apart from their size, I have not been able to see any difference between the two species and, therefore, consider them identical.

Both were published at the same time. *Flavidula*, for obvious reasons not being a proper denomination, I deem it better to adopt *aberrans* as the specific name.

It may be questioned whether *A. Kufuim* Speg. should not also be merged in *A. aberrans*. Having had no chance of examining any specimen, and the description of the first named, in some particulars, not quite agreeing with *A. aberrans*, *A. Kufuim*, I think, at least at present, should be allowed to retain its position as an independent species. Spegazzini collates *A. Kufuim* with *A. montevidensis* Spr., while *A. aberrans* rather reminds of *A. umbellata* Colla.

In this connection I wish to draw attention to an error in my previous work "Die Gefässpflanzen der Magellansländer." On page 219, *A. Kufuim* is said to occur in Magellan and Fuegia, but this applies rather to *A. aberrans*. D.

A. ANTARCTICA Hook. fil.—Macl., p. 185.

Should be deleted, being identical with *A. magellanica* Lam.

A. ANTONIANA Gris.—Macl., p. 185.

This species is identical with *Calamagrostis Antoniana* (Gris.) Hack. and should therefore be transferred to that genus.

Add Macl., p. 185:

A. BUCHTIENII Hack. in Fedde Rep., II, p. 69.

This species has the same habit as *Agrostis exarata* Trin. (in Macl., p. 187) and stands near to that species, but *A. exarata* differs by having scabrous leaves and very short palea (still shorter than the ovarium). Besides, the fertile glumes are very often awned. In all probability, though, also *A. Buchtienii* has awned glumes, as the middle nerve of the same ends abruptly in their upper third. To judge by the description, *Agrostis santacruzensis* Speg. may also stand near to *A. Buchtienii* but differs from that species by longer ligule (3–5 mm. long), by more lax, more open, and slightly nodding panicle, by its glumes being scabrous at the margin, by indistinctly 3-nerved floral glumes and very short palea five times shorter than its glume. D.

Add Macl., p. 186:

AGROSTIS CANINA L. subsp. GRANDIFLORA Hack. in Skottsb. Flor. Feuerl., p. 5.

Differt a typo spiculis majoribus, 3 mm. longis.

(*a*) Forma INDUSA Hack.

Arista brevi, inter glumas inclusa.

S. Fuegia, Navarin I.

(*b*) Forma MUTICA Hack.

Arista nulla.

S. Patagonia, north of Lago San Martin by Rio Fósiles in the mountains in watery meadows, at the height of about 800 m. S. Fuegia, near Ushuaia, Navarin I. The subspecies is known also from Scotland.

Agrostis canina L. var. *falklandica* (Hook. fil.) Hack.—Macl., p. 186 (*A. canina falklandica* Hook. fil.), occurs in Fuegia and S. Patagonia.

A. CANINA L. var. MUTICA Gaudin., Flor. Helvet., p. 172.

Differs from the type by the absence of an awn.

S. Patagonia, Lago Argentino, on open places in the beech-forests.

Agrostis canina var. *tenuifolia* (Bieb.) Boris—Macl., 186, 192, must be deleted, as it is identical with *A. canina* var. *falklandica* (Hook. fil.) Hack. as Skottsberg writes it. "I suppose this form of writing must be accepted, because Macloskie states Hook. fil. to be the author of the variety, while he is the author of the species *A. falklandica*." D.

Add Macl., p. 186:

A. CHONOTICA Phil.

Cæspitosa, culmis 24–32 cm. altis, usque ad paniculam contractam spiciformam vaginatis, vaginis foliisque glaberrimis; folia explanata, inferiora 16–19 cm. longa, suprema c. 4 cm. longa et 2 mm. lata; panicula 5–7 cm. longa; glumæ subæquales, 5 mm. longæ, cuspidatæ, fere aristatæ, dorso glaberrimæ; flores vix 2 mm. longi, glaberrimi; palea inferior apice truncata, denticulata, inermis, superior minima.

W. Patagonia, Chonos Archipelago.

Add Macl., p. 186:

A. cæspitosa Gaud. is identical with *A. stolonifera*, which is itself identical with *A. alba*, fide Skottsberg.

A. COGNATA Steud.— Macl., p. 186.

To be placed as a variety of *Agrostis magellanica* Lam. (Macl., p. 188).

A. EXASPERATA Trin.— Macl., p. 187.

Perhaps I should not omit mentioning that O. Kuntze describes a couple of colored forms to which he has given the rank of varieties under the names of *viridis* and *purpurascens*, their spikelets being tinted as indicated by their names. Cf. Kuntze, Rem. III^2, p. 339.

A. LECHLERI Steud.—Macl., p. 188.

The species not being known from our district should be deleted.

Add Macl., p. 188:

A. LEPTOTRICHA Desv.

Annua, cæspitosa; culmi elati, 4.5–10.0 dm., alti, glabri, splendentes, in ⅔ longitudinis foliati; folia plana, sicca convoluta, striata, utrinque ad strias nec non ad margines denticulato-scabra, anguste linearia, 8–13 cm. longa, vaginis 5–16 cm. longis, striatis, scabriusculis, ligulis oblongis, 3–4 mm. longis, apice laceratis; panicula 13–16 cm. longa, primo contracta, demum laxissima, ramis longissimis, tenuissime capillaribus, terquaterve di- vel trichotome ramulosis, nutantibus, non divaricatis, inferioribus 5–8 verticillatis, ⅔ longitudinis paniculæ æquantibus; pedicelli 6–20 mm. longi scaberuli, sub spiculis c. 3 mm. longis incrassati; glumæ steriles subæquales, ovato-lanceolatæ, carinatæ, carina denticulato-scabra; callus breviter pilosus; gluma fertilis glumis paullo brevior, mutica, glabra, 5-nervata, nervo medio infra apicem evanescente, apice truncata et 4-mucronulata; palea minima, rotundata.

N. W. Patagonia, Rio Manso; S. Chili.

Description.—Annual, cespitose, with glabrous culms; leaves plane, narrow-linear, striated, scabrous on both sides; sheaths striated, scaberulous; ligules oblong, lacerate; panicle at first contracted, at last open, lax, rays very long, capillary, di-trichotomous, nodding but not divaricate, the lowest ones verticillate, 5–8-partite, as long as two thirds of the panicle; pedicel scaberulous, incrassate at top; glumes subequal, ovate-lanceolate, denticulate-carinate; fertile glume a little shorter than the empty glumes, excepting the pilose callus, glabrous, 5-nerved, the medial nerve evanescent near the end, truncate, 4-mucronulate; palea very small, rotundate.

Near to *Agrostis montevidensis* Spr., which differs by larger flowers, larger awn, glabrous callus and acute fertile glume. D.

Add to Macl., p. 189:

AGROSTIS MAGELLANICA Lam. var. COGNATA Steud.
Syn. *Agrostis cognata* Steud. (in Macl., p. 156).

Magellan.

According to Steud. Syn. Glum., I, pp. 421–422, *A. cognata* is closely allied to and, may be, separated only as a variety from *A. magellanica.* Steudel says it differs from the last named species by "valvula solitaria" and my examination of a specimen in Stockholm Herbarium of *A. cognata* numbered 1123 in W. Lechler *Plantæ Magellanicæ* confirms his statement.

In outer appearance *A. cognata* coincides with *A. magellanica,* and the only difference between them is that the latter has a rudimentary palea, whilst *A. cognata* has none at all. This slight disparity is not sufficient for separating them specifically, and I, therefore, place *A. cognata* as a variety of *A. magellanica.* D.

Add Macl., p. 192:

A. VULGARIS With.

Root fibrous, subrepent, with capillary fibres. Culm erect, 30–90 cm., leafy, the leaves narrow, acute, long-sheathed, ligule short, erose, muticous. Panicle erect, spreading, semiverticillate; rays divaricate, flexuous di–trichotomous; glumes subequal, lanceolate, acute, purplish; valvules whitish, outer as long as glume, inner half as long, and awned.

Magellan, Punta Arenas; Falkland Is., Port Stanley. Certainly not indigenous. D.

Add Macl., p. 189:

A. MONTEVIDENSIS Spr. var. SUBMUTICA Doell. in Flora Bras., Fasc. 79, p. 22.

Root fibrous; culms numerous, ascending, 30–45 cm., simple or below floriferous, branching, with glabrous nodes, and the sheaths exceeding the internodes. Lower leaves filiformly involute; upper leaves flat. Panicle obovate, spreading, 10–20 cm.; 3–4 rays trichotomously branching; branches and branchlets long, 1-flowered. Valve solitary; no rudiment.

W. Patagonia in the upper part of the Rio Aysen valley; S. Fuegia in the valley of Rio Azopardo. D.

A. NARDIFOLIA Gris.—Macl., p. 189. (Not *A. nardiflora.*)

Is to be deleted, as it is identical with *Calamagrostis nardifolia* (Gris) Hack.

Add Macl., p. 191:

A. PYROGÆA Speg. var. MUTICA Hack. nov. var.

A typo differt non solum aristæ defectu, sed etiam spiculis nitente-violaceis nec flavidulis. (Hackel.)

S. Patagonia, in the heart of the Sta. Cruz Territory on an herbous slope.

Add Macl., p. 192:

A. STOLONIFERA Linn. Sp. Pl., Ed. I, p. 62, 1753.

Syn. *A. cæspitosa* Gaud.; *A. alba* Schrad. Fl. Germ., I, p. 209; Hartman, Skand. fl. ed. X; fortasse etiam Linné Icon.; Fl. Dan., tab. 1623; Ands, Pl. Scand. II, Gram., f. 109.

The synonymy, excepting *A. cæspitosa*, accords with Sr. Murbeck in Botaniska Notiser, Lund, 1898.

Culm decumbent, branching, leafy, glabrous, jointed. Leaves broad, scabrid both sides. Ligule oblong (multifid). Panicle coarctate; rays semiverticillate, the lower more spreading, floriferous from base, and flexuous; glumes obtuse, carinate (purpurascent), hoary outside; valves shorter, obtuse, unequal. Falkland Is.

Is the same with *A. alba* L. fide Skottsberg (Bot. Survey of Falklands). "I follow Sr. Murbeck, who has given, in Botaniska Notiser, a definite solution as to the systematic arrangement of the north-European species of the genus. His paper was hitherto unknown to me. My reference is to this paper of Murbeck, unfortunately written in Swedish. I quote the complete synonymy of Murbeck," as to this species.

In his dissertation "North American Species of Agrostis," A. S. Hitchcock, from the single specimen in Linné's Herbarium of *A. stolonifera* (which, according to a note in Linné's own handwriting, was found in Attica), concludes that this species does not belong to the North European flora, but is indigenous in the warmer parts of the old and new world. In Linné's Flora Suecica, however, *A. stolonifera* is given as common, and in his Species Plantarum there is appended to its name the somewhat inexplicit note "in nemoribus." Possibly Linné's *A. stolonifera* includes two species; but be this as it may, it can be safely presumed that the species from the Falkland Islands here referred to, namely, *A. stolonifera* is identical with the Scandinavian form and not with that South European form or species to which Hitchcock would confine the name *A. stolonifera.*

This species having a very limited range in peraustral South America, being, in fact, found only in the Falkland Islands and, in all likelihood there confined to the vicinity of Port Stanley, must in all probability have been introduced. D.

AGROSTIS UMBELLATA Colla.—Macl., p. 192.

This species has a far larger area of distribution than might be inferred from previous accounts of it. I have found it in a good many places in the western parts of the Sta. Cruz Territory, for instance at Lago Argentino, Lago Viedma and Lago San Martin; it occurs also in the upper valley of Rio Aysen and very likely throughout the whole of W. Patagonia, at least within the zone of deciduous beeches. D.

Add Macl., p. 192:

AGROSTIS UMBELLATA Colla var. MUTICA Hack. nov. var.

Differt a typo aristæ defectu.

S. Patagonia, Lago Argentino on herbous slopes in the wooded mountains.

CALAMAGROSTIS.

Add Macl., p. 194:

C. ANTONIANA (Gris.) Hack.

Syn. *Agrostis Antoniana* Gris.

S. Patagonia, near Lago Viedma at the border of the beech forest; Lago San Martin by a rivulet; the Cordillera of Peru and Bolivia.

I have in my work "Neue und Seltene Gefässpflanzen aus Ost- und Südpatagonien" stated Steudel to be the author of *Calamagrostis Antoniana.* Steudel, who used the name on a ticket in W. Lechler's *Plantæ*

Magellanicæ without addition of a description cannot, however, according to the international rules of nomenclature, be cited as the author. The plant was, at first, described by Grisebach as an *Agrostis*, and, recently, Hackel has informed me that it belongs to the genus *Calamagrostis*. D.

C. NEGLECTA Gaertn.

Syn. *C. stricta* Trin. *Deyeuxia neglecta* Kunth.

Root creeping; culm simple, strict, glabrous, 45–60 cm. Leaves linear, acuminate, plane, with scabrid margin. Ligule obtuse. Panicle narrow, spreading, 10 cm.; glumes equal, oblong, acute; upper valve shorter than lower; seta exsert below the middle, scarcely exceeding the valve.

Europe, N. Amer.; Patagonia, Fuegia.

From not a few localities in Fuegia, as well as southern and western Patagonia, I have brought back specimens of this species, and the materia, thus collected was defined by Professor E. Hackel. Later on, that Swedish expert in North-European Calamagrostides, Dr. S. Almquist has, likewise, examined the same specimens and arrived at the same results as Hackel. Almquist, however, goes a step farther than Hackel, inasmuch as he divides the material into two groups, of which the one comprising the majority of specimens is characterized by the culm being comparatively thick and robust, thereby differing from the typical *C. neglecta*. According to Almquist this form should be taken to be a subantarctic breed of the present species.

To the other group belong the specimens collected at Rio Aysen in W. Patagonia. These also have a very robust culm, but show a more marked difference from the type by their longer and denser, slightly nodding panicles, which are sometimes discontinued at the base. These latter Almquist takes as a subspecies of *C. neglecta.*

That also E. Hackel has noticed the greater discrepancy of the specimens from the Rio Aysen valley, is evident by a note by him on the label attached: "An *C. poæoides* Steud.?" and this presumption is, naturally, supposed by Steudel's description of his species. Whether, in fact, the specimens in question are identical with *C. poæoides*, cannot be decided without a comparison with an authentic specimen of that species. Until this point shall have been settled, I think, the baptism of the subspecies might be deferred.

By the examination of the material referred to, it has been conclusively proved that another of the North European grasses is to be added to the "pretty many" previously known which, in a typical or modified form, recur in the peraustral parts of S. America. D.

Add Macl., p. 196:

Calamagrostis erythrostachya Desv. occurs also in North Patagon., Territory of Neuquen.

Add page 196, after line 8 from foot:

CALAMAGROSTIS FALKLANDIÆ Steud.

Root fibrous, cespitose. Culm simple, erect, short, 10–12 cm., with finely pubescent sheaths. Radical leaves flat, very narrow, striate, acuminate, not equalling the stem, smooth. Panicle spike-like, rays solitary or paired, 1–2-flowered spikelets sub-linear. Glumes 2, thin, exceeding the flower, which is hairy at base. Lower valve dorsally scabrid, awned; rudiment of a second flower or not.

Falkland Is., Fuegia; Territory of Neuquen. D.

Page 196:

C. MACLOVIANA Steud.

Root cespitose, bearing leafy fascicles, partly sterile. Culms short, scarcely equalling the leaves, which are broad at base, terete, rigid, pungent above, 10–12 cm. and glabrous. Panicle spike-like, at length exsert, with few rays; spikelets short-stalked. Glumes lanceolate, keel scabrid, flower hairy at base; upper valve shorter than the flower; rudiment small or none.

Falkland Is.; Fuegia.

HOLCUS L.

H. LANATUS L.—Macl., p. 196.

Also in the Falkland Ids., Port Stanley and in N. W. Patagonia by Rio Manso.

ERIACHNE R. Br.

E. malouinensis Steud.—Macl., p. 197, should be deleted. This genus is certainly not represented in the flora of the Falkland Is. It is however impossible to determine the systematic position of the plant which was erroneously referred to the genus, as we have no authentic specimen of the Falkland plant.

Add Macl., p. 198:

AIRA L.

A. PRÆCOX L.

Falkland Is., introduced. *Airopsis præcox* (L.) Fr. of Macl., p. 195, should be changed into this genus *Aira* (olim *Airopsis*, nunc *Aira*). *Aira flexuosa* L., added by Macl., is identical with *Deschampsia flexuosa*, and should, in my opinion, be deleted. D.

A. ATROPURPUREA Wahlb.—Macl., p. 198.

Some time ago I stated that the figure of this species given in Flor. dus. (sub *A. magellanica*) agrees exactly with specimens of the same species preserved in the Stockholm Herbarium. I have also expressed the view that this species, in fact, must be transferred to the genus *Deschampsia*, in accordance with the exposition of the Gramineæ in Engler and Prantl Nat. Pflanzen-familien; viz. its subgenus *Vahlodea* as already noted in that work. I have not, however, made such a transfer, as that will involve too many changes to be attempted at this time. *Deschampsia antarctica* is by Skottsberg transferred to *Aira*. I have carefully examined the species and think it is undoubtedly a *Deschampsia*. But as a new systematic arrangement of the Grasses is probably coming, we cannot discuss these equations at present. D.

Macloskie has, according to Desvaux in Flor. Chil., VI, p. 340, put down *Aira magellanica* Hook. fil. as synonymous with the present species, to which there is no reasonable objection to be made. Though I have not seen a specimen of *A. magellanica*, J. D. Hooker's reproduction of it in Flora Antarctica, II, Tab. 134, appears to be identical with *Aira atropurpurea*. D.

Add Macl., p. 198:

A. FLEXUOSA Linn. (Syn. *Deschampsia flexuosa*).

Panicles diffuse, glumes rough on rib, upper erose at tip, with central and two obscure lateral ribs; awn jointed, inserted near the villous base, long; leaves setaceous. D.

Falkland Is.

A. SUPERBIENS Steud.—Macl., p. 198.

Being synonymous with *Poa fuegiana* (Hook. fil.) Hack. (of p. 227) this species should be left out.

There is not the slightest doubt of the identity of *A. superbiens* and *Poa fuegiana.* I have examined a specimen of the former, which is numbered 1194 in W. Lechler's *Plantæ Magellanicæ* and I find it to be identical with the latter.

Add Macl., p. 199:

AIRA ELATIOR Steud. (= *Deschampsia Kingii*).

Root stout, cespitiferous. Culms 90 cm., erect, smooth, reed-like, long-sheathed, sheaths striate; ligules obtuse, entire. Leaves narrow, flat, complicate, 30 cm. Panicle contracted, 20 cm., rays capillary, whorled, dividing upwards, with few spikelets; these 5 mm. violet-silvery, glabrous. Glumes exceeding the paired flowers, one flower sessile, one pediceled, with silvery hairs. Lower scale obtuse, apically awned.

Chili; S. Patagonia, Magellan, Punta Arenas; Fuegia. D.

A. VERSICOLOR Roem. & Sch.

Root fibrous, cespitiferous; culms sheathed, leafy, terete, 15–22 cm. Sheaths long glabrous; leaves setaceous, the radical 6 cm., flexuose, spreading. Culms erect, rigid, obtuse. Panicle contracted, 3 cm. pedicels capillary, torted; glumes unequal; valves unequal, the lower rough at nerves, pilose at base, apex entire. Awn twisted, arising above the base, long.

Patagonia?

A. VESTITA Steud. — Macl., p. 199.

This species should also be deleted, being synonymous with *Deschampsia flexuosa* (L.) Trin.

A. vestita has No. 1193 in the above collection of Magellan plants by W. Lechler. The specimen I have examined agrees with *Deschampsia flexuosa*, at least it approaches its variety or, properly speaking, form *montana* (L.).

DESCHAMPSIA Beauv.

D. ACIPHYLLA (Franch.) Speg. — Macl., p. 200.

Has a far wider distribution than stated by Macloskie. In addition to Fuegia and the Magellan Territory, it is also found in W. and N. Patagonia.

Here should, probably, be placed *Deschampsia tenella* Phil. as a variety of *D. aciphylla.* According to Spegazzini — cf. Speg. Add. Flor.

Patag., III, p. 193 — the difference between them is of no great importance. Having had no opportunity of examining any specimens of *D. tenella*, it seems to me to be more convenient to let it remain, for the present, as an independent species, as stated by Macl., p. 203.

Add Macl., p. 201:

D. ANTARCTICA (Hook. f.) Desv. var. BREVIROSTRATA Hack.

Vide Flor. Ant., II., p. 377. Cf. etiam F. Kurtz, Collectanea ad Fl. argent., pp. 259–260.

Char. of var. Culms densely cespitose, 1–3 in. long, erect or procumbent, leafy; leaves long, sheathing, linear-subulate, margins involute; panicle large, 4–6 in., profuse; rays fasciculate, capillary; and pedicels long, scabrous. Spikelets lanceolate, narrow, and 2-flowered; with setula of a third. Glumes lanceolate, scabrid, ciliate, acute, exceeding the flowers. Lower valve bifid, awn straight, slightly exceeding the glume.

Falkland Is.; Kerguelen Land; S. Patagonia, Upper Rio Gallegos.

The species extends considerably further north than stated by Macloskie as I have, myself, found it to be common at fresh-water lagoons in the Sta. Cruz Territory, and Spegazzini notes it from N. Patagonia. D.

D. FLEXUOSA (L.) Trin.—Macl., p. 201.

Syn. *Aira vestita* Steud.

The range of the species is more extensive than that given by Macloskie. It is rather common in the western part of the Sta. Cruz Territory in the lowlands as well as in the mountain slopes, up to an altitude of 700 m., and occurs not less frequently in the upper part of the Rio Aysen valley from its foot up to 800 m. In open ground it scarcely attains the height of 3 dm., in the forest one to two dm. more. D.

D. GRANDIFLORA Nees. — Macl., p. 201.

Steud. Syn Glum., I, p. 220 (sub *Aira*).

Stated by Steudel to be a Fuegian plant. It has never been rediscovered. Very probably identical with *Deschampsia Kingii* (Hook. fil.) Desv.

D. KINGII (Hook. fil.) Desv.—Macl., p. 202.

Syn. *Aira elatior* Steud. *Trisetum Dozei* Franch.

Aira elatior, No. 1222 in W. Lechler, *Plantæ Magellanicæ* agrees with the present species, as I have been able to ascertain by examining a specimen of Steudel's plant preserved in the Stockholm Herbarium.

Trisetum Dozei, according to Franchet in Miss. Cap Horn., V, p. 385, is only a robust form of *Aira elatior*, and might, consequently, be placed as synonymous with the present species.

DESCHAMPSIA PULCHRA Nees et Mey.—Macl., p. 203.

Any confirmation of Macloskie's statement of the occurrence of this species in Patagonia I cannot find, and it should, therefore, be withdrawn. According to Desvaux in Flor. Chil., VI, p. 336, and Steudel in his work, Syn. Glum., I, p. 220 (sub *Aira*), it belongs to Chili. D.

Page 203: *Deschampsia tenella* Phil. (1899) conflicts with the same name given in 1890 by Petrie to a New Zealand plant; but it is (Macl., p. 200) only a synonym of *D. aciphylla* (Franch). D.

TRISETUM Pers.

T. DOZEI Franch.—Macl., p. 204.

Should be deleted, being synonymous with *Deschampsia Kingii* (Hook. fil.) Desv.

T. REPENS (L.) MAGELLANICUM Desv.—Macl., p. 205.

This refers to *Agropyrum magellanicum* (Desv.) Hack., which, by mistake, has got a place also amongst the *Trisetum* species. Cf. Macloskie's description, p. 205, with that of *Agropyrum magellanicum*, p. 246

Under this species Macloskie inserts *T. secundum* Kth.—read *Triticum secundum*, not *Trisetum*—which refers to *Agropyrum secundum* Presl, or, properly speaking, to *Agropyrum magellanicum* (Desv.) Hack. var. *secundum* (Presl.). Macl., p. 247. D.

T. SUBSPICATUM Beauv. var. BREVIGLUME Hack. Apud Skottsb. Flor. Feuerl., p. 6.

Differt a typo glumis sterilibus quam fertiles $\frac{1}{5}$–$\frac{1}{4}$ brevioribus, fertilibus integris, brevius aristatis.

Observatory I. (close to Staaten I.).

T. SUBSPICATUM Beauv. var. FUEGIANUM Hack. Apud Skottsb. Flor. Feuerl., p. 6.

Differt a typo glumis sterilibus fertiles æquantibus, his mucronato-bidentatis.

S. Fuegia, Ushuaia in the mountains, c. 800 m.

T. SUBSPICATUM L. var. GLABRIFOLIUM Hack. nov. var.

Differt a typo culmo elatiore, foliis glabris.

W. Patagonia, in the Rio Aysen valley.

AVENA L.

A. LEPTOSTACHYS Hook. fil.—Macl., p. 207.

Known also from S. Fuegia.

DANTHONIA DC.

Add Macl., p. 208:

D. PICTA Nees var. PATAGONICA Speg. *hirsutior* Hack.

Differt a varietate foliis dense cæspitosis, apice plerumque recurvatis, pilis mollibus, patentissimis densiuscule vestitis.

A low subalpine or alpine grass, rather densely tufted.

S. Patagonia, north of Lago San Martin by Rio Fósiles in the mountains about 1000 m.

TETRAPOGON SPATHACEUS Benth. should be deleted.

Engler & Prantl, Pfl. Fam. on Gramineæ, p. 60, state that *Tetrapogon* Desf. (*Cryptochloris* Benth.) has 5 species, 4 in North Africa, Abyssinia, and West Asia; and 1 (*Chryptochloris*) elsewhere (Patagonia?). In my copy of Speg. Plant. Pat. Austr. Spegazzini has left the following marginal note by *Cryptochloris spathacea:* "Elymus Kurtzii Speg.!" In this he informs us that the determination, *Cryptochloris spathacea*, is wrong; and the plant is identical with *E. Kurtzii.*

Cf. F. Kurtz, Collectanea ad Flor. Argent., p. 259, "Cryptochloris spathacea Speg. dans Rev. Fac. Agron. y Vet . . . est Elymus Spegazzinii mihi, espèce tres voisine (si non identique?) de l' E. erianthus Phil." In 1908 Hackel informed me that *Elymus Spegazzinii* really is synonymous with *E. erianthus* Phil., this name being older than *E. Spegazzinii.*

Hence we must delete *Tetrapogon spathaceus* Benth., without substituting anything, as the question is still unsettled. D.

Macl., p. 212, insert, 5 lines from foot:

PHRAGMITIS DIOICA Hack.

Argentina; N. Patagonia, Territory of Neuquen.

PHRAGMITIS PILOSA (d'Urv. sub *Arundo*).

Leaves striate, convolute, subdistichous, often exceeding the culms, scales are 1 ft. Panicle subovate, contracted. Calyx smooth, its scales acute, as long as the 5–7-flowered spikelets. Valves smooth, with copious long, white villi; outer valves keeled, tipped by a very long awn; inner valves shorter, subapically trifid.

Falkland Islands. D.

CHLORIS Sw.

C. PETRÆA Thunb.—Macl., p. 209.

Not noticed from Patagonia; is, therefore, to be deleted.

Macl., p. 213: GYNERIUM. Insert the following note: The old genus *Gynerium* is now divided into the two genera, distinguished as follows:

Gynerium Humb. & Bonpl.
Cortaderia Stapfer.

Both are diœcious.

Gynerium has 2-merous flowers, 2 flowers in the spikelet, each with two stamens (staminodes in the female plants). The glumes (sagittate) long-pointed; the pales ovate, one twice as long as the other. The only species of this genus is *G. saccharoides* H. & B. A tall cane-grass (4–8 m.), S. Mex. to S. Brazil, and cult. for bouquets.

Leaves linear, carinate, margins cartilaginous, serrulate. Panicle subsecund, contracted, apically nutant. Rays slender, spikelets 3-flowered; flowers caudate-acuminate. Culm 30–90 cm., panicle 8–10 cm. long.

N. Patagon. Territory of Neuquen; Chili.

Cortaderia Stapf. is 3-merous, the spikelet having 3 or 6 flowers, the upper flower shorter; and the pales narrow, acuminate; stamens 3 (staminodes in the females). Cespitose cane-grasses, the leaves very fine and long, crowded around the bases of the culms. This has 5 species, all in extratropical South America, the most important being *C. Selloana* (Schult.) Aschers. et Graeb., Stapf., or pampas grass. D.

CORTADERIA QUILA Nees et Mey. of Stapf, in Gardener's Chronicle, 1897, p. 396.

Syn. *Gynerium quila* Nees & Mey.

Add the synonymy.

Syn. *Arundo dioica* Spr. Syst. Veg., I, p. 39 (1825) haud Lour.

Arundo Selloana Schult. Mant., III, p. 605 (1827).

Gynerium argenteum Nees, Agrost. bras., p. 462 (1829).

Cortaderia argentea Stapf. Gard. Chron., 3 ser., XXII, 346 (1897).

Cortaderia dioica (Spreng.) Speg., Nov. Add. Flor. Patag., III, p. 194.

This is the full synonymy; the correct specific name is Selloana, not dioica: Ascherson & Graebner explain this in Syn. Europ. Flora, II, p. 325. D.

C. ARAUCANA Stapf. in Gardener's Chronicle, 1897, p. 396.

W. Patagonia in the upper part of the Rio Aysen valley; N. Patagonia, by Lago Nahuel-huapi.

C. SELLOANA.

The same as inserted by Macl., p. 213, under the name of *Gynerium argenteum.* Distribution stated by Macloskie.

C. PILOSA (d'Urv.) Hack.

Syn. *Arundo pilosa* d'Urv.; *Gynerium nanum* Phil.

This species occurs also in W. Patagonia, in the upper part of the Rio Aysen valley, in the mountains; in S. Patagonia, by Lago Argentino in swamps, and in S. Fuegia by Rio Asopardo in swamps.

ERAGROSTIS Beauv.

Macl., p. 215:

E. ERAGROSTIS (L.) Karst.—Macl., p. 215.

This name should be replaced by

E. MEGASTACHYA (Koel.) Link., Hort. Berol., I, p. 187 (1827).

Syn. *Poa megastacyha* Koel. Descr. Gram., p. 181 (1802).

Eragrostis Eragrostis MacMillan, Metasp. of the Minnesota Valley, p. 75 (1892).

E. delicatula Trin. is to be deleted as an independent species, and should be placed as a variety of *E. pilosa* (L.) Beauv.; thus:

E. PILOSA (L.) Beauv. var. DELICATULA (Trin.) Hack.
(Syn. *E. delicatula* Trin.)

Add Macl., p. 216:

KOELERIA Pers.

K. BERGII Hieron.

Sheaths and leaves retrorse-velvety. Spikelets 2-flowered, the third flower abortive, and only represented by the rather long racheole.

S. Patagonia, in meadows near Rio Chubut.

Koeleria sterilis Steud. is found at Magellan Strait. D.

Add Macl., p. 216:

K. BERGII Hier. var. TYPICA Domin. Mon. Koel., p. 122.

N. Patagonia, Carmen de Patagones.

K. BERGII Hier. var. PATAGONICA Dom. Mon. Koel., p. 123.

S. Patagonia, Pescadores in the vicinity of the emporium Sta. Cruz.

Macloskie's introduction of *Koeleria Bergii* may be right, as the specimens are from Rio Chubut; but being so, it is not certain whether they belong to the type (var. *typica*) or not. *K. sterilis* probably does not belong to the genus *Koeleria*. Cf. Domin, Monographie Koeleria, in Bibliotheca Botanica. D.

Koeleria Kurtzii is to be deleted, the determination not being correct. Cf. Skottsberg, Bot. Survey of Falkland.

Phragmitis pilosa (d'Urv. sub *Arundo*) should be deleted, being identical with *Cortaderia pilosa*.

GLYCERIA R. Br. (By Macloskie *Panicularia* Fabr.)

Add Macl., p. 219:

G. FLUITANS R. Br. var. STRICTA Desv. Apud Gay Flor. Chil., III, p. 390.

S. Patagonia, by Lago San Martin on dry shores of fresh-water lagoons; W. Patagonia in the upper part of the Rio Aysen valley.

Characterized by elongated, narrow, upright spikes up to 25 cm. long, or still longer and also by sessile spikelets at the bases of the erect rays.

The genuine *G. fluitans* R. Br. is said by Spegazzini to occur in Patagonia; I myself have not noticed it in our district.

To the present genus should be transferred *Panicularia antarctica* and *fuegiana*—Macl., p. 219—as well as *Panicularia leptostachys*—Macl., p. 220—originally placed by Spegazzini in *Glyceria*. D.

PANICULARIA MAGELLANICA (Hook. fil.)—Macl., p. 220.

Should be deleted, being identical with *Atropis magellanica* Hook. fil., on the same page.

ATROPIS Rupr.

Add Macl., p. 220:

A. AIROIDES Hack.

Poa airoides Nutt.; Thurb. sub *Glyceria.*

Root fibrous, cespitiferous; culm jointed from base, erect, 10–15 cm. with valve and sheaths striate, glabrous; ligule ciliolate, leaves narrow-linear, plane, scabrid, 3 cm. Panicle spreading, rays irregularly in 2's, 3's or more: upper one solitary. Spikelets lanceolate, small; lower flowers shortly pediceled; glumes minute; valvules 3–5-nerved, acutish; seeds oblong, rufescent, apiculate.

S. Patagonia, Lago Argentino on watery argillaceous ground; western part of the United States. Very rare, previously not noticed from Patagonia. D.

Add Macl., p. 221:

A. PRESLII Hack. subsp. BREVICULMIS Hack. Apud Skottsb. Flor. Feuerl., p. 7.

Differt a typo culmo plerumque in cæspite innovationum occulto (panicula tantum exserta), toto vaginato, ligula brevi obtusa, spiculis viridibus; glumis sterilibus quam fertiles superpositæ ⅔ brevioribus, fertilibus obtusiusculis, apice integris interdum mucronem brevissimum latum exhibentibus, antheris minutis (0.3 mm. longis), in anthesi intra glumas retentis. A subspecie *pusilla* differt etiam panicula condensata, spiculis contiguis vel imbricatis.

Forsitan species propia habenda? (Hackel.)

S. Fuegia, Ushuaia; Observatory I. near Staaten I.; Falkland Ids.

Add Macl., p. 221:

DACTYLIS GLOMERATA Linn. Cock's-foot Grass.

Panicle with secondary branches short, dense, subsecund. Spikelets compressed, flowers perfect, 3–4. Glumes shorter than florets, unequal, outer one keeled. Outer glumelle keeled and ciliate dorsally, 5-nerved, lanceolate, a bristle near its summit enclosing the grain.

Falkland, introduced.

POA L.—Macl., p. 221.

P. ANNUA L.—Macl., p. 223.

Sown on the Beagle Canal, Fuegia, by Mr. Bridges, from English seed, it has wonderfully flourished in the region, spreading over the prairies, and exterminating the native vegetation. Is found also in the Falkland Is., and in South Georgia. Is marked by Skottsberg as cosmopolitan.

POA ANTARCTICA (d'Urv.) Pilger.

Syn. *Arundo antarctica* d'Urv. *Festuca antarctica* Kunth.
Poa rigidifolia Steud.

Root fibrous, cespitiferous; culms with enlarged basal sheaths enclosed in persistent remains of leaves; ligules long hyaline; old and fresh leaves convolute, terete, rigid, pungent, as high as the culms. Interrupted spike-like panicle 8 cm.; spikelets lanceolate, 2-flowered, with hairs at their base. Glumes nearly as long as the flowers, acute, apex rough.

Falkland Is.; N. Fuegia. D.

P. CENISIA All.

Root stoloniferous. Culm (30 cm.) and sheaths glabrous: highest sheath much exceeding its leaf. Ligules short, the higher ovate; leaves lanceolate, plane, acute. Panicle spreading, peduncles in 2's, rarely 5's; spikelets ovoid, 3–5-flowered; flowers hairy dorsally and marginally, 5-nerved, with wool.

European Alps, and Arctic. S. Fuegia in the alpine region near Ushuaia.

The Fuegian form of this species differs from that found in the European Alps by the greater laxness of the innovation-leaves, the longer ligule and the more obtuse floral glumes, and mostly larger spikelets. (Skottsberg.)

P. CHONOTICA Phil.

Diœcious perennial; culm 30–60 cm., leafy to midway; leaves complicate, subfalcate, smooth except margin; radical leaves strict, erect, with white sheaths, shining, sometimes over 12 cm. long, 8 mm. broad; ligule short, truncate, lacerate. Panicle erect, oblong, 12 cm., its branches in 3's or 2's. Spikelets 7 mm. long, 2–3-flowered: pales narrowing upwardly, from broad base.

Chili, Fuegia.

P. DENUDATA Steud. and P. DENUDATA MINOR.—Macl., p. 226.

Should be deleted. They do not occur in our district.

Add Macl., p. 226:

P. Dusenii Hack., apud Dusén, Neue Gefässpfl., Patag., p. 8, Taf. 3, Fig. 1, and Taf. 7, Fig. 3.

Perennis, cæspitosa, innovationibus intravaginalibus; culmi erecti, c. 35 cm. alti, subcompressi, glaberrimi, uninodes, nodo parum supra basin sito denudato, superne longi nudi; vaginæ culmeæ compressæ, glaberrimæ, summa 10–12 cm. longa, laminam brevem ferens, infimæ, præsertim innovationum, valde dilatatæ, subbulbosæ, emortuæ cinereo-fuscæ, diu persistentes; ligula foliorum innovationum elongata (6–8 mm. longa), subtubulosa, hyalina, glabra, foliorum culmeorum brevior, in vaginæ margines late decurrens; laminæ innovationum arcte setaceo-complicatæ, c. 6 cm. longæ, 0.5 mm. diam., culmeæ breviores, latiores, omnes erectæ, glauco-virides, glaberrimæ, lateribus (in sicco) sulcatæ; panicula lineari-oblonga, 6–9 cm. longa, contracta, c. 1.5 cm. lata, densa, rachi ramisque lævibus, his binis-ternis, erectis, rigidulis, primario inferiore 2–3 cm. longo, in ⅓ inferiore nudo, multospiculato, secundario brevi, fere a basi spiculifero, plurispiculato, spiculis breviter vel brevissime pedicellatis, pedicellis scabris, subæqualiter et dense imbricatis; spiculæ fœmineæ tantum notæ, ovato-oblongæ, dense 4–5-floræ, ad 7 mm. longæ, floribus sese fere ad apicem usque tegentibus, ex albo-viridulo et livide violaceo-variegatæ; glumæ steriles subæquales, 5–6 mm. longæ, ovato-lanceolatæ, acuminatæ, acutissimæ, 3-nerves, carina superne scabra, fertiles fere ad apicem usque tegentes, ovato-lanceolatæ, acutæ, 5 mm. longæ, in ½ vel ⅓ superiore albo-membranaceæ, glabræ, nervo medio tantum percursæ, in ⅓–⅙ inferiore omnino dense appresseque pilosæ, 5-nerves (nervis in pute immersis), callo brevissime pilosulo (neque crispato-lanato); palea quam gluma ¼ brevior, lanceolata, acute bidentula, carinis in ⅓ inferiore villosulis; stamina non inveni; caryopsis oblonga, subtrigona glumæ laxius, paleæ arctius adhærens.

E. Patagonia, by Puerto Mazaredo on bushy steppe.

This species belongs probably to the section *Dioicopoa*. The description of *Poa pubiflora* Benth. shows that a very close relation exists between that species and the present. *P. pubiflora* is denoted by "palea inferior undique molliter pubescens et carina longiuscule ciliata," while in *P. Dusenii* the floral glume is hairy only in its lower part and its carina scarcely ciliate. Bentham's brief diagnosis gives no statement about the ligule which, therefore, must be presumed not to show any conspicuous

character. The ligule of *P. Dusenii*, on the other hand, is long and includes in the innovations the following leaf resembling a tube.

Poa flabellata Hook. fil.
Syn. *P. cæspitosa* Forst.

The tussock grass is found also in South Georgia, in the Falkland Is., and in the smaller islands, is almost dominant, often surrounded by *Chiliotrichium diffusum*, and with *Poa annua* L. and *Apium graveolens* L. growing near it. The tussock clumps are higher than a man, and leave pathways between them, whereby one can penetrate. Though rough in texture, they are a favorite fodder for herbivorous animals (S. Birger).

P. flabellata (Lam.) Hook. fil. var. mucronulata Hack. nov. var.

Differt a typo ligula brevissima truncata, paniculæ laxioris interruptæ ramis basi nudis, glumis fertilibus brevissime mucronulatis, sæpe inconspicue bidentatis.

W. Patagonia, in the lower Rio Aysen valley. D.

Add Macl., p. 228:

P. fuegiana (Hook. fil.) Hack. var. involucrata Hack.,
apud Skottsb. Flor. Feuerl., p. 7.

Differt a typo panicula laxiuscula subnutante, glumis fertilibus callo lana copiosa stricta (non contortuplicata) 1/3–1/2 glumæ æquante barbatis, carina nervisque submarginalibus in 1/4–1/3 inferiora tantum parte sericeo-pilosulis.

S. Fuegia, in the alpine region near Ushuaia. D.

P. glauca Vahl. in Fl. Dan., p. 3, tab. 964 (1792).
Syn. *P. glauca* J. P. Smith in English Botany, Tab. 1720.
(*P. cæsia* Sm.)

Root fibrous, culm erect, 1 foot, glaucescent, smooth, strictly striate, as long as the leaves; ligules short and usually obtuse. Panicles erect, diffuse, branching much, with subverticillate, scabrous rays, the radials binate. Spikelets ovate, erect; flowers remote; dorsally woolly; marginally scarious and silky. (The description is of *P. glauca* Fellm. Quaere whether it agrees with *P. glauca* Vahl.)

Europe.—Smith in English Botany, Ed. 1, Tab. 1720.

W. Patagonia, in the Rio Aysen valley on sandy shores at the border of the forest, Lago Argentino at the border of the beech forest, abundant; E. Fuegia in bushy steppe; S. Fuegia at the border of the beech forest near Rio Grande; N. Europe.

All my specimens from Fuegia and W. Patagonia previously referred to *Poa nemoralis* L. are without doubt identical with *P. glauca* Sm. as quoted above. C. Lindman, who is preparing an explanation of the N. European Poaceæ, has been so kind as to determine my specimens. D.

P. LANIGERA Nees.—Macl., p. 228.

Should be deleted. Not known from Patagonia.

Add:

P. LATIFOLIA Phil.—Macl., p. 228.

Perennial, diœcious, culms to nearly 1 m.; leaves radical, 30 cm., by 12 mm. broad; margin and midrib scabrid, very acute; ligule short-truncate, lacerate; panicle 25 cm., dense; branches in 4's; spikelets 4, flowered; glumes as long, scarious-edged, the lower narrow, acute; feminine flowers basi-pilose; lower pale as long as upper glume; rough on nerves; upper pale acute.

W. Patagonia; Chonos Archipelago. D.

P. MAGELLANICA Phil.—Macl., p. 229.

Also in S. Patagonia, in the steppe, collected by Hatcher and kindly determined by Hackel.

P. NEMORALIS L.—Macl., p. 229.

Should be eliminated.

Add to Macl., p. 229:

P. OLIGERIA Steud.

Root slender, cespitose. Culm erect, strict, 30 cm. or more, with glabrous sheathing leaves; the leaves linear, plane, acute, or the upper rather obtuse, 5 cm. long, 1 cm. broad; ligule ovate, obtuse. Panicle lax, 5–7 cm. long, rays 4–5, subwhorled, few-spiculate. Spikelets 3–5-flowered; glumes equalling the lower flowers. The lower valve hairy.

Fuegia; Magellan, Puntas Arenas. D.

Add Macl., p. 229:

POA PRICHARDI Rendle.

A diœcious, glaucous, perennial grass 30 cm. high, having a single stemleaf 11 cm. long, with a ligule 6 cm.; the strong striate sheath twice as long as the blade, which is apically pungent; panicle compact, the rachis and branches rough, short, densely spiculiferous; spikelets turgid, purplish; sterile glumes subequal, acute, 3-nerved; fertile glumes 6, glabrous, 5-nerved; pales one fourth shorter than the glumes in the female flowers.

S. Patagonia, by springs on slopes of the Buenos Aires Mt. by Lago Argentino. D.

P. ROBUSTA Steud.—Macl., p. 230.

Should be deleted, being identical with *Festuca arenaria* Lam., Macl., p. 233.

P. robusta Steud. is No. 1191 in W. Lechler's *Plantæ Magellanicæ.* My examination of a specimen emanating from that collection, preserved in the Stockholm Herbarium and signed with the above number, has proved the identity of *P. robusta* with *Festuca arenaria.*

The specimens collected by Hatcher at Coy Inlet and determined by Macloskie as *P. robusta* Steud. have nothing to do with that species or, properly speaking, with *Festuca arenaria* Lam., but belong to *Poa magellanica* Phil. (Macl., p. 229). D.

P. SCABERULA Hook. fil. — Macl., p. 231.

Syn. *Poa dactyliformis* Steud.

This species has a somewhat wider area of distribution than stated by Macloskie. It is rather common in W. Patagonia and occurs probably in the whole district of the deciduous beeches. Noticed by me by Lago Argentino, Lago Viedma, Lago San Martin and in the Rio Aysen valley. Also known from N. Argentina.

Poa dactyliformis Steud., No. 1151, in W. Lechler, *Plantæ Magellanicæ* — a specimen preserved in the Herbarium Stockholmiense has been examined by me — agrees with *P. scaberula.* D.

Add Macl., p. 231:

P. SCABERULA Hook. fil. var GRACILLIMA Speg.

Differt a typo gracilitate plantæ, panicula spiciformi, lineari, angustissima, elongata.

Patagonia, in the Chubut Territory, by Lago Fontana on watery meadows.

Add Macl., p. 231:

P. SUBENERVIS Hack., apud Dusén, Neue Gefässpfl. Patag., p. 7, Taf. 2, Fig. 3, and Taf. 7, Fig. 2.

Perennis, rhizomate plus minusve repente, innovationibus intravaginalibus; culmi innovationesque basi decumbentes, geniculato-ascendentes, ad 20 cm. alti, robusti, glaberrimi, 1–2-nodes, nodo superiore prope basin partis culmi erectæ sito; vaginæ internodiis longiores, teretes, glaberrimæ, emortuæ, inferiores mox dilabentes, suprema laxiuscula, fere medium culmum æquans, laminam abbreviatam (1–1.5 cm. longam) ferens; ligula brevissima, truncata, puberula; laminæ lineares, obtusiusculæ, mucronulatæ, planæ vel complicatæ, innovationum ad 5 cm. longæ, statu explanato 2.5 mm latæ, culmeæ parum breviores latioresque, omnes glaucovirides, rigidæ, patentes, sæpe curvulæ, subtus nervo medio marginibusque ± scabræ, nervis crassis supra parum prominentibus percursæ; panicula linearis, spiciformis, 4–6 cm. longa, ad 8 mm. lata, contracta, densa, stricta, rachi inferne lævi, ramis plerumque binis, erectis, rigide filiformibus, scaberrimis, primario inferiore ad 2 cm. longo, in ⅓ inferiore nudo, 3–4-spiculato, secundariis brevissimis, plerumque unispiculatis, spiculis æqualiter dispositis, subimbricatis, breviter vel brevissime pedicellatis; spiculæ ellipticæ, c. 7 mm. longæ, 3.5 mm. latæ, dense 3–4-flores, floribus sese ad ⅘ usque tegentibus, hermaphroditis e viridi et violaceo variegatæ; glumæ steriles parum inæquales (4 et 5 mm. longæ), fertiles contiguas ad ¾ usque tegentes, late lanceolatæ, acutæ, I 1-nervis, II 3-nervis; fertiles ovato-lanceolatæ, 5 mm. longæ, acuminatæ et mucronulatæ, callo circumcirca pilis 1 mm. longis rectis barbatæ, ceterum glabræ, carina superne scaberulæ, præter nervum medium in mucronulum productum subenerves, i. e. nervis utrinque 2 tenuissimis vel omnino obsoletis percursæ, chartaceo-membranaceæ, superne vix hyalino-marginatæ; palea gluma parum brevior, lanceolata, acutiuscula, bidentula, carinis eximie spinuloso-ciliata; antheræ 2.5 mm. longæ, atroviolaceæ; stigmata longe lateque plumosa.

S. Patagonia, in watery meadows in the mountains between Lago Viedma and Laguna Tar, c. 1000 m.; north of Lago San Martin by Rio Fósiles in watery meadows, c. 800 m.

The habit of the present species is like that of *Poa stoloniformis* Presl, but the last has long, smooth and acute ligules, viridescent spikelets and distinctly 5-nerved floral glume with smooth callus. From the description of *P. obvallata* Steud. we may conclude that that species also is akin to the present. *P. obvallata* differs by longer callus hairs (being half as long as the floral glume or nearly so), by oblong or ovate, acute ligules and by erect, not genuflexed culm. D.

Macl., p. 234: Substitute *Vulpia bromoides* (L. sub *Festuca*) St. Lager, — vice *Festuca bromoides* L. (fide Index Kewensis, Supp. 2).

Root cespitose, much branching. Culm erect, terete, glabrous, 6 in. to 1 ft. or less. Leaves setaceous, angled, short, ligule short. Panicle secund, erect; spikelets upwards, and rachis and rays scabrid: spikelets ovate, about 6-flowered; glumes acute, the outer nearly setaceous, the inner twice as long and twice as broad, 3-nerved. Flowers subulate, rough, and awned. Lower valve acute, marginally hairy.

Europe, Africa, America; Falklands (introduced).

FESTUCA L.

F. ARENARIA Lam.—Macl., p. 233.

Syn. *Poa robusta* Steud.; *Calamagrostis macloviana* Steud.

As synonymous with *F. arenaria* is also to be placed *Calamagrostis macloviana* (No. 107 in Herb. Lechler), of which I have seen only sterile plants agreeing exactly with the present species.

Festuca erecta d'Urv., is found in Fuegia, Falklands, Kerguelen I. and South Georgia Is. In this last it occupied dry parts, whilst the swampy places were occupied by Bolax vegetation, and by mosses such as *Polytrichum* (Skottsb.) in South Georgia.

F. FUEGIANA Hook. fil.—Macl., p. 235.

Should be deleted, being identical with *Poa fuegiana* (Hook. fil.) Hack.

Add Macl., p. 237:

F. OVINA L. var. GENUINA Hack. subvar. HISPIDULA Hack. Mon. Festuc. Europ., p. 87.

Magellan.

Add Macl., p. 238:

F. OVINA L. var. MAGELLANICA (Lam.) Hack. subvar. LÆVIGLUMIS Hack. nova subvar.

Differt a typo glumis omnibus lævibus (in typo glumæ fertiles strigillosæ vel hirtellæ sunt).

S. Patagonia, Coy Inlet.

Very near to *Festuca ovina* L. subsp. *brevifolia* (A. Br.) Hack., which differs by broad sterile and fertile glumes and weaker leaves.

FESTUCA OVINA L. subsp. HYSTRICOLA Hack. Apud Dusén Neue Gefässpfl. Patag., p. 10.

Culmi c. 20 cm. alti, uninodes, nodo basi approximato, superne longissime denudati; vaginæ innovationum integræ, emortuæ non fibrosæ; ligula manifeste biauriculata, glabra; laminæ breves c. 2 cm. longæ, grosse setaceæ, diam. 0.7–0.8 mm., obtusæ, omnino complicatæ, subcylindricæ, læves, glaucæ, 5-nerves, sub epidermate exteriore stratis sclerenchymaticis 2–4 continuis vel sæpius inter nervos interruptis instructæ; panicula brevis, 3–4 cm. longa, subsimplex, ramis paucis, 1–3-spiculatis; spiculæ 3–4-floræ, 6–7 mm. longæ; glumæ steriles inæquales, II ad ⅔ IV$^{\text{æ}}$ pertinens, fertiles anguste lanceolatæ, scabræ, brevissime aristatæ; antheræ 1 mm. longæ.

S. Patagonia, Puerto San Julian and Sta. Cruz emporium, common in the steppe. D.

F. OVINA BREVIFOLIA S. Watson.—Macl., p. 237.

Should be deleted. The specimen determined by Macloskie as *F. ovina brevifolia* belongs to *F. ovina* L. var. *magellanica* (Lam.) Hack. subvar. *læviglumis* Hack. (See above.)

F. OVINA L. var. PYROGÆA (Speg.) Hack.

Syn. *F. pyrogæa* Speg.—Macl., p. 239.

S. Fuegia, by Ushuaia, also in the alpine region.

F. PLATYPHYLLA Steud.—Macl., p. 238.

Should be deleted, being identical with *F. purpurascens* Banks et Sol. There is a specimen of *F. platyphylla* in the Stockholm Herbarium numbered 1224 from W. Lechler, *Plantæ Magellanicæ.* It agrees with specimens of *F. purpurascens*, Macl., p. 239.

FESTUCA PURPURASCENS Banks et Sol.—Macl., p. 239.
Syn. *Festuca platyphylla* Steud.

In Sta. Cruz valley. Occurs also in W. Patagonia; noticed by me from Lago Argentino, Lago Viedma, Lago San Martin and the Rio Aysen valley.

Add Macl., p. 239:

F. RUBRA L.

Root stoloniferous, cespitiferous. Culm decumbent, ascending, simple, glabrous, striate, 30 cm. Leaves radical, complicate-setaceous; culms plane. Ligule 2-eared. Panicle spreading, spikelets about 5-flowered. Varies, spikelets short villous, and others larger, woolly.

S. Patagonia, north of Lago San Martin, on open places in beech forests by Rio Fósiles, 900 m. D.

F. RUBRA L. var. SIMPLICIUSCULA Hack. apud Dusén, Neue Gefässpfl. Patag., Taf. 2, Fig. 2.

Differt a typo panicula lineari, simpliciuscula, spiculis in parte superiore solitariis, breviter pedicellatis, in paniculæ basi binis, altera longius, altera brevissime pedicellata; foliorum ligulæ eximie biauriculatæ.

S. Patagonia, north of Lago San Martin by Rio Fósiles on watery meadows, c. 800 m. D.

Add Macl., p. 240:

F. URVILLEANA Steud.

Root fibrous; culm erect, rigid (30 cm.), leaves densely crowded at base, rigid, convolute, glabrous; some midway flabellately distichous, exceeding the culms; panicle oblong, dense, spicate-contracted, 4 cm. glumes subequal, with floscules acute, short; one sessile, the other pediceled; lower valve scabrate on keel and margin, acuminate.

Falkland Is., Fuegia. D.

F. SCOPARIA Hook. f.

Panicle few-flowered, subcoarctate. Spicules compressed, rather large, 4–5-flowered. Valves of glumes subequal, 3-nerved, shorter than the flowers. Lower pale with a scabrid ridge, long bearded baseward, apically acute. Leaves closely involved; very long linear-filiform, rigid, attenuate. Culms erect, fasciculate, slender upwards and naked.

Root strongly fibrous. Culm erect, glabrous, 30 cm., with very long, rigid convolute leaves, to 60 cm. long. Panicle contracted, its rays suberect, scabrid; lax-flowered, spikelets spreading, whitish; glumes equalling the flowers; the valves scabrid, lanceolate, acuminate.

Chili; Magellan, Fuegia; also in New Zealand; Aucklands; Campbell's Id. D.

F. PYROGÆA Speg.—Macl., p. 239.

Should be deleted, having been transferred to *F. ovina* as a variety of that species.

BROMUS L.

B. COLORATUS Steud.—Macl., p. 241.

Also in W. Patagonia, common in the whole district of the deciduous beeches.

Add Macl., p. 242:

B. MACRANTHUS Mey. var. MINOR Desv.

Syn. *Bromus pictus* Hook. fil.—Macl., p. 243.

Belongs also to the flora of Chili.

Add Macl., p. 242:

B. MACRANTHUS Mey. var. DUSENII Hack. nov. var.

Differt a typo culmo, paniculæ rachi ramisque velutino-puberulis, vaginis pilis reversis pubescentibus, glumis fertilibus non solum nervo medio marginibusque in ½ inferiore strigilloso-pilosis, sed etiam in interstitiis nervorum hirtulis, superne scabris.

S. Patagonia, Lago Argentino at the border of the beech forest. D.

BROMUS PICTUS Hook. fil.—Macl., p. 243.

Should be deleted, being identical with *Bromus macranthus* Mey. var. *minor* Desv.

AGROPYRUM Gaertn.

A. REPENS Beauv.—Macl., p. 247.

Should be deleted; this species does not belong to the flora of our district.

A. MAGELLANICUM Hack.

P. 246. Dr. Carlos Spegazzini has furnished the following diagnosis of this species which he treats as a variety of *Triticum magellanicum* (Desv.)

Speg. var. *glabriuscula* Speg. (a synonym being *T. repens* L. var. *magellanicum* Desv.).

T. rhizomate repente, 4.5–9 cm.; ligula brevissima denticulata; foliis planis v. convolutis, intus punctulato-scabris; spica 3–6-pollicaris, virente, spiculis erectis laxiusculis non adpressis, oblongo-ellipticis, compressis, 12–16 mm. longis, 3–4-floris; glumis subæqualibus oblongo-ellipticis spiculam dimidiam æquantibus v. superantibus convexis, 4–6-nerviis, muticis v. mucronatis inæquilateralibus apice eroso-denticulatis, extus pubescenti-scabris; palea inferiore 5-nervia, oblongo-elliptica, mutica v. subaristata, sæpius emarginulata, extus dense pubescenti-scabra.

Hab. Fretum magellanicum, Patagonia maritima orientalis et occidentalis australis, oræ Fuegiæ; Staaten Id., Falkland Ids. D.

Macl., p. 246:

A. MAGELLANICUM (Desv.) Hack. var. GLABRIVALVA Speg.

Fuegia.

Macl., p. 246: add to *Agropyron fuegianum* (Speg.), its var. *submutica* Kurtz, in E. Fuegia. Alboff, Flor. de E. Fueg., p. 47.

P. 247, delete *A. pubiflorum* Steud. being identical with *A. magellanicum* (Desv.) Hack.

Macl., p. 248, insert in the table, 6 lines from foot of page, as follows: d3. Culm 25 cm. Spikes 3–4 mm., easily breaking, purplish. Glumes all setaceous, 15 mm. long, *pubiflorum* (wild barley).

HORDEUM L. — Macl., p. 248.

Here Macloskie has introduced confusion as to species and varieties, which Dusén endeavors to clarify by deleting:

(1) *H. chilense* Brongn. as only a synonym.
(2) *H. pratense* Huds. as a synonym and non-Patagonian.
(3) *H. chilense* Desv. as a synonym and not of Desv., and by adding:

H. SECALINUM Schreb. var. CHILENSE Gay Flor. Chil., VI, p. 458.
(Brongn.) Desv.

Syn. *H. chilense* Brongn.; *H. pratense Brongniartii* Macl., p. 251; *H. pratense chilense* Macl. (non Desv.).

E. Fuegia; Magellan; S. Patagonia, Rio Sta. Cruz; Central Patagonia;

in the Chubut Territory, Taka-choique; N. Patagonia; W. Patagonia, upper Rio Aysen; Chili.

N. B. *Hordeum secalinum* Schreb. was published 1771 and *Hordeum pratense* Huds. 1778 in the second edition of Hudson, Flora Anglica (not in the 1st edition of 1762). *Hordeum nodosum* L. was published in 1762 in the 2d edition of Species Plantarum and is, according to Ascherson and Graebner, a quite doubtful plant. There is no *Hordeum secalinum* L.

Macloskie's exposition of this genus contains many species and varieties which must be deleted, viz., *H. chilense* Brongn. (Macl., p. 249; *H. pratense* Huds., Macl., p. 250). This species was published not in 1762 (1st ed. of Hudson's Flora Anglica), but in 1778 (2d ed. of that work). Macloskie also states that *H. secalinum* L. of 1771 is synonymous with *H. pratense* Huds.; but there is no *H. secalinum* of L., and Macloskie must refer to *H. secalinum* of Schreb., which was published in 1771. *H. nodosum* L. of 1762 is according to Ascherson & Graebner, in their Flora of Central Europe, quite a doubtful plant. Hence it is certain that *H. pratense* Huds. (of Macl., p. 250) must be replaced by *H. secalinum* Schreb. D.

Macloskie also mentions *H. pratense* as occurring in N. Patagonia, a statement apparently based on the Rio Negro Report, which refers to a form very near to *H. secalinum* as occurring near Rio Negro. In harmony with this we would replace the *Hordeum pratense chilense* Desv. (E. Fuegia, Dusén), Macl., p. 251, by *H. secalinum* Schreb. var. *chilense* (Brongn.) Desv., as the same name appears in Dusén's Gefässpfl. Magell., p. 233, and emanated from Hackel, who determined his specimens.

Macloskie's statement that *H. pratense* Huds. (that is, *H. secalinum* Schreb.) occurs in Patagonia is erroneous. Thus far it is not known from any part of the district, but its var. *chilense* is reported from Patagonia and from Fuegia by all the botanists who have reported on the flora of the steppe district. Hence there can be no question but that *H. pratense* Huds. must be replaced by *H. secalinum* Schreb. var. *chilense* (Brongn.) Desv. The above mode of writing indicates that it was Desvaux who gave *H. chilense* of Brongn. its place as a variety of *H. secalinum* Schreb. D.

As to *Hordeum pratense Brongniartii* (Macl., p. 251) and *H. pratense chilense* Desv. (p. 251), a comparison of Macloskie's descriptions of these varieties demonstrates their identity. Besides this the description of *Hor-*

deum pratense Brongniartii (Macl., p. 251) is a complete verbal translation of *H. secalinum* Schreb. var. *chilense* (Brongn.) Desv., as given by Desvaux in Gay, Flor. Chil., VI, p. 458. Also by oversight Macloskie gives one and the same plant, viz., *H. secalinum* var. *chilense* (Speg., Prim. Flor. Chub., p. 630, in collibus siccioribus) as belonging both to *Hordeum chilense* Brongn. and to *H. pratense Brongniartii* Macl.

Hence we must delete from Macloskie's list *H. pratense*, *H. chilense*, *H. pratense Brongniartii* and *H. pratense chilense*, deleting the first of these, and absorbing the other three in *H. secalinum* var. *chilense* (Brongn.) Desv. This occurs in E. Fuegia; Patagonia, in the steppe from its northernmost to its southernmost section; hitherto, however, not known from the coast-district. D.

Add Macl., p. 254:

ELYMUS L.

E. ERIANTHUS Phil. Anal. Mus. Nac. Chile, 1892, p. 13, t. 3, fig. 3.
Syn. *Elymus Spegazzinii* F. Kurtz.

Elymus erianthus Phil. syn. *E. barbatus;* but this name must be replaced by *E. Spegazzinii*, as *E. barbatus* seems to be only a manuscript-name. Hooker and myself have not succeeded in finding this name in the literature, and enquiry of Mr. Kurtz has not brought us any answer. D.

E. Patagonia, Puerto Mazaredo in bushy steppe; S. Patagonia, near Sta. Cruz emporium in the steppe, by Lago Viedma on drift-sand, in the mountains between Lago Viedma and Laguna Tar.

Family 11. CYPERACEÆ. Macl., p. 256.

CYPERUS L.

Add Macl., p. 258:

C. LECHLERI Steud.

Leaves linear-lanceolate, plane, margins rough, spongiose, with elevated points. Involucral leaves similar, but unequal: rays short, 4 cm.

N. W. Patagonia, Rio Manso.

SCIRPUS L.

S. ALBIBRACTEATUS (Nees et Mey.) OK.—Macl., p. 260.

Should be transferred to the genus *Heleocharis*, p. 264.

Macl., p. 261, *S. cernuus* occurs also in North Patagonia, Territory of Neuquen; Valkland; almost cosmopolitan.

Delete *S. maritimus* L. — Macl., p. 262.

Macloskie states that this species occurs in S. Patagonia; but this, certainly, is not the case. The specimens collected by Hatcher at Rio Chico and referred by Macloskie to the present species belong to *Scirpus riparius* Presl. D.

S. RIPARIUS Presl. — Macl., p. 263.

Also in S. Fuegia, but very rare; S. Patagonia, Lago Argentino, in that lake and in freshwater lagoons, also in swamps, sometimes abundant; in Shewen rivulet nearly everywhere, abundant; abounding in rivulets, freshwater lagoons and other stagnant waters in the vicinity of Lago San Martin; Rio Chico, by Hatcher.

HELEOCHARIS R. Br.

H. ALBIBRACTEATA Nees.

Syn. *Scirpus albibracteatus* (Nees et Meg.) OK.

N. and E. Fuegia; S. Patagonia, in swamps and on the shores of freshwater lagoons, rather common; Falklands.

Add Macl., p. 266:

H. MEGALOSTACHYS (d'Urv.) Kunth.

With thick, woody rhizome, distinguished by the form of the spike. Flowering culms terete, angulate and compressed, striate, smooth with colored dots, outer sheath many-striate, inner few-nerved. Spike apical, clavate, or oblong-lanceolate involucrate by large ovate lanceolate scales which are obtuse, ruddy. Caryopsis compressed, obovate, equally biconvex.

Falkland Is.; Fuegia; S. Chili.

H. STRIATULA Desv. — Macl., p. 265.

Also in W. Patagonia, Rio Corcovado.

CYPERACEÆ–CARICOIDEÆ. SEDGES AND SEDGE-LIKE PLANTS.

Taking the term Sedges in its wide sense, as including the *Uncinia* or Hooked-Sedges, and the *Carices*, or Hookless Sedges, Kükenthal (in Pflanzreich IV, 20, 1909), compares them with the World of Grasses, by noting that they differ from Grasses in having the culms not cylindrical, and not hollow and jointed, but triangular, solid and jointless; and that in the seed the minute embryo is enclosed in the endosperm at its base, the seed being itself enclosed in the lodicule, whilst the embryo of Grasses remains external to the endosperm, the leaves being in 2 rows in the Grasses and 3-ranked in the Cyperaceæ.

Kükenthal divides the Sedge-like plants into a large number of chief sections, distinguished partly by structure and partly by habitat; and groups all the leading species within a comparatively small number of genera: the chief genera being *Uncinia*, or Hooked Sedges, which are chiefly characteristic of the Southern Hemisphere, and *Carex*, which is cosmopolitan. In the first half of the Caricoideæ, we encounter three genera, *Schœnoziphium*, *Cobresia*, *Uncinia*, and in the latter half the only genus is *Carex*.

The first of the genera, which we may call No. 1 is confined to Africa, and characterized by very simple monœcious flowers. The next genus, No. 2, is *Cobresia* Willd., containing numerous species in the Asiatic alps, and two species found in the Arctic and alpine parts of Europe, and in the Canadian mountains. They form four sections of genus *Cobresia*. Our next type is the genus *Uncinia* Pers., having two subgenera, and two sections of the first subgenus, thus named.

- Genus *Uncinia*, with hooked rachil; No. 7.
    - Subgenus *Eu-Uncinia*, rachil long-hooked; No. 8.
    - Subgenus having two sections.
        - Section 1, Platyandræ, filaments dilated; No. 9.
        - Section 2, Stenandræ, filaments filiform, not dilated; No. 10.
    - Subgenus *Pseudocarex* Kükenth., rachil with very short hook; No. 11.

Lastly we have the type,

- Genus *Carex* L., No. 12, usually with no rachil, and never with a hook.

UNCINIA Pers.—Macl., p. 268.

The appearance of Kükenthal's treatise on Cyperaceæ-Caricoideæ enables us to improve our treatment of the Patagonian sedges. As the only difference between *Uncinia* and *Carex* appears to be that in all the Unciniæ the seta is hooked at the apex, whilst it is never hooked in *Carex;* we may distinguish them as the Hooked Sedges and the True Sedges.

Kükenthal gives the *Uncinia kingii* Boott a place by itself, because its hook is very small, thus setting it up as the type of the subgenus *Pseudocarex*. The other sections (together making *Eu-Uncinia*) are *Platyandræ*, with dilated filaments, and *Stenandræ*, with filiform filaments, and smooth utricles.

All the 21 species of *Uncinia* are found in the Southern Hemisphere, in the Antarctic Islands, Australia, Tasmania, New Zealand, in the mountains of South America; with stragglers northwards as far as Jamaica and the Sandwich Islands. And a few species occur in Chili, Patagonia, Fuegia and the Falkland Is.

In the Patagonian flora, we have—

a. SPECIES OF PLATYANDRÆ.

UNCINIA BREVICAULIS Thou. Add Macl., p. 269.

Rhizome long. Culm 10–30 cm. high, triquetrous, smooth. Leaves on the culm, 3–7 mm. broad, folded at base. Spikelets dense, cylindrical, 4–12 cm., male part short. Scales few, oblong-obovate, embracing at base, obtuse; utricles ending in a short beak. Style-base scarcely enlarged. Secondary axis prolonged beyond the utricle. Syn. *U. cylindrica* Franch.

Var. LATICARPA Kükenth

Has weaker culm; spikelet subclavate. Scales dorsally green, margin fulvous. Utricle green.

West Patagonia, by Rio Aysen.

Syn. *U. cylindrica* Franch. (Macl., p. 269, pro spec.),

W. Patagonia; Molineaux Harbor, Chili; Tristan da Cunha.

Its var. LATICARPA Kükenth.; in West Patag. Var. MACLOVIANA (Gaudich.) Falklands, and S. Fuegia.

U. PHLEOIDES Pers.—Macl., p. 271.

Leaves long-attenuate. Rostrum short; rachil straight.

W. Patagonia, Rio Aysen, Rio Palena, upper part of Rio Chubut; S. Chili; Bolivia; Peru; Ecuador; Colombia.

U. PHLEOIDES Pers. var. LATICARPA Kük.

Rhizome woody, stoloniferous. Culm 30–75 cm., firm, smooth. Leaves long, 4–10 mm. broad; sheaths brown. Spicules oblong-cylindric, apically clavate, 7–15 cm. by 5 mm., dense flowered, ending in a nude part, basi-attenuate. Female scales oblong, obtuse, apex white, ciliated. Males shorter and broader. Utricles twice as long as scales, narrow-oblong, obsoletely trigonal, attenuate to a stalk, and above to rostrum. Rachil exceeding the utricle.

Andes Mts. of Chili, etc., W. Patagonia, Rio Aysen.

Add Macl., p. 272:

UNCINIA ERINACEA (Cav.).

Syn. *U. macrotricha* Franch.

Leaves briefly acuminate. Spikelets oblong, not club-shaped. Utricles broad, inflated; at length divaricate, hispid. Rachil five times the length of the utricle, divaricate.

Patagonia, Otway, Guaitecas.

b. SPECIES OF STENANDRÆ.

U. MACROPHYLLA Steud.

Syn. *U. bracteosa* Phil., Macl., p. 269.

Dense-flowered; female scales long-persisting, spikelet thick, 10–15 mm. Filaments widened upwards.

W. Patagonia; also in Valdivia and Corral.

U. LECHLERIANA Steud.

Spikelet 5–7 cm. long, dense-flowered. Scales only 3–7 mm. broad; filaments filiform, not broadened. Scales purplish to chestnut.

Magellan; Fuegia. Var. *triquetra* Kükenthal, Rio Condor and Ushuaia.

U. MACROLEPIS Decne.

P. 272: *U. Sinclairii* Boott. is only a synonym of *U. macrolepis* Decne, which is the correct name (non *U. Lechleri*, though *Index Kew.* favors this).

Spikelet only 1–2 cm. long. Rachil twice as long as utricle.

Magellan; S. Fuegia; also New Zealand.

U. TENUIS Poepp.

Lax-flowered; rhizome stoloniferous. Base of scales long-saccate. Leaves 2 mm. broad, equalling the culm, flat, rigid. Style-base thickened; rachil twice as long as utricle.

Magellan, Port Famine, Cape Horn; also in Costa Rica.

Subgenus Pseudocarex.

U. Kingii Boott.

Small herb, with short-ovate capitate spikelets. Utricles lance-subulate, opening obliquely. Rachil very shortly hooked. Only species of this subgenus.

Magellan; Port Famine; Fuegia.

U. microglochin belongs to *Carex* because of its hookless unjointed seta. It is *Carex microglochin* Wahlenb. Its prevailing Arctic distribution favors the same conclusion.

NOTE ON THE GENUS CAREX, SEDGE.

Carex contains about 800 existing species, scattered over the world; and also remains of many more fossil species. The one great genus is arranged by Kükenthal under four subgenera, and 69 sections, including numerous subsections, each of which stands for an array of species, closely allied to each other.

For the Patagonian species our most convenient method is to attend especially to such of the sections and subsections as are represented in the flora of that region; and thus to confine our attention to this part of the large Sedge Family; and the sections and other groups are numbered for convenience of reference.

Divisions of the True Sedges.—Carex, No. 12.

Subgenus I; *Primocarex*, No. 13, with only one terminal spikelet; capitata.

Subgenera with several spikelets.

- Subg. II. Spikelets bisexual, sessile. Cladoprophyl (*i. e.*, bract of second or third axis) mostly none formed. Subgen. II, *Vignea*, No. 14.
- Spikelets bisexual or unisexual, mostly pediceled. Bract always developed.
  - Subg. III. With bisexual spikelets. Bract utriculiform. Subgen. III, *Indocarex*, No. 15.
  - Subg. IV. Spikelets mostly sexually distinct. Bract, at least in lower spikelets, shoe-shaped. Subgen. IV, *Eucarex*, No. 16.

Subgenus I. *Primocarex*. Spikelet single, terminal. Utricle rounded at base.

- Stigmas 2, spikelet bisexual, small, ovate; male part short. Sect. 17. *Microcephalæ*, No. 13,
- Stigmas 3. Sect. *Junciformes*. Androgynous, male part several-flowered; scales concave, pallid, the lowest bractlike. Utricles pyriform, pubescent. *aphylla, andina, subantarctica*, No. 18.
- Sect. *Unciniæformes*, as *Primocarex*, No. 13; but scales soon caducous. Stigmas 2–3; androgynous. Utricles membranaceous, erect, becoming divaricate. No. 19.
  - Subsect. *Aciculares*. Spikelet bracted; utricles not divaricate nor reflexed. *trichodes, caduca, vallis-pulchræ*, No. 20.

Subsect. of 19. *Pauciflorœ.* Spikelets lax, few-flowered. Utricles short-stiped, at length reflexed. Utricles trigonal-lanceolate. Stigmas 3. *microglochin*, var. *oligandra*, No. 21.

Subgenus II. *Vignea.* Stigmas 2.

Sect. *Incurvœ.* Rhizome long-creeping. Spikelets few, crowded; utricle inflated, 3 mm. long. Magellan, Sandy Point, and cosmopolitan. *incurva*, No. 22.

Sect. *Fœtidœ.* Spikelets several, crowded in an ovate head; utricles plano-convex, membranaceous, obsoletely nervose. *nebularum*, var. *Kurtziana*, No. 23.

Sect. *Divisœ.* Rhizome thick; spike subdense, lobed. Utricles dorsally nerved, rostrum cleft anteriorly; stigmas 2. *Gayana*, *marcida*, *macrorrhiza*, No. 24.

Sect. *Bracteosœ.* Rhizome subrepent, with short internodes. Spikelets ovate, androgynous, not numerous; the lower with 1–3 long bracts. Utricles becoming squarrose, spongy, and having a broad rostrum. Style basally thick; stigmas 2. *bonariensis*, *sororia*, No. 25.

Sect. *Ovales.* Rhizome cæspitose. Spikelets several, crowded, gynandrous. Scales colored; utricles broad, concave-convex, very shortly stiped. *macloviana*, No. 26.

Subgen. III. *Indocarex.* All are tropical; and unknown in the Patagonian Flora. No. 15.

Subgenus IV. *Eucarex*, No. 16,

Section *Acutœ.* Spikelets dense, bracts not sheathing. Utricle plane-convex, or biconvex. Stigmas 2. No. 27.

Subsect. *Vulgares.* Culms rather slender; leaves long-acuminate, flaccid; bracts leaflike; exceeding the inflorescence. Utricles nervose, not turgid. *decidua*, *Goodenoughii*, No. 28.

Subsect. *Cryptocarpœ.* Aphyllopod; rhizome stoloniferous. Culms stout, triquetrous: the sheaths leafless, reticulately cleft. Leaf-margins revolute. Spikelets pendulous. Female scales dorsally 3-nerved. Nut constricted. Stigmas 2. *Darwinii*, var. *Serranoi*, var. *molepis*, No. 29.

Sect. *Atratœ.* Female spikelets subsessile, the terminal gynecandrous. Scales black-fuscous. Utricles trigonal, glabrous. Style not thick, stigmas 2. *atropicta*, No. 30.

Sect. *Limosœ.* Female spikelets sub-dense-flowered, pendulous. The scales cupreous; the bracts briefly sheathing. Style exsert, its base equal; stigmas 3. Nut enclosed. Patagonia; Magellan; Fuegia; Falklands; also in Eurasia, and N. America. *Andersonii*, No. 31.

Sect. *Frigidœ.* Utricles more or less rostrate; often 2-toothed; leaves never septate-nodose. Female scales dark-purple to fuscous. Stigmas 3. No. 32.

Subsect. *Fuliginosœ.* Stigmas 3; bracts sheathing. Lateral spikelets female, not numerous. Leaves broad. Terminal spikelet often gynecandrous. Female scales dark-fuscous. Utricles glabrous, nerveless. Culms firm, cernuous apically. *Banksii*, No. 33;

Sect. *Spirostachyœ.* Utricles membranaceous, with rostrum very 2-toothed. Culms central. bracts long-laminate. Style-base equal, deciduous, slender. Leaves narrow; lateral spikelets scarcely over 2 cm. long, oblong-cylindric. Utricles obliquely open, rostrum briefly 2-toothed. *fuscula*, *acaulis*, *oederi*, No. 34.

Sect. *Pseudocypereœ.* Leaves septate-nodose. Utricles glabrous, membranaceous, long-rostrate: obtusely trigonal, scarcely inflated. Style slender; stigmas 3. *pseudo-cyperus*, No. 35.

Sect. *Physocarpœ.* Leaves septate-nodose. Utricules glabrous; obtusely trigonal, scarcely inflated, long-rostrate, membranaceous. Style slender, stigmas 3, short. No. 36.

Subsect. *Lupulinœ.* Style-base thickened. Utricles subcoriaceous, 10–18 mm. long, many-ribbed, attenuate rostrum to a long tip. *macrosolen*, *Dusenii*, No. 37.

Sect. *Paludosæ.* As 37, but utricles subcoriaceous or suberose, with short rostrum. Style firm, straight; stigmas 3. *trifida*, No. 38.

Sect. *Hirtæ;* as preceding, but utricles more or less rough. Aphyllopod; rhizome emitting long hard stolons. Leaves with pilose septate nodose sheaths, reticulately cleft. Bracts leafy, often sheathing the culm. Style firm, with 3 rather long stigmas. *æmatorrhyncha*, *corralensis*, No. 39.

Add. Macl., p. 277:

C. ACAULIS d'Urv. (of Section *Spirostachyæ*).

Leaves plane, 2 mm. broad, apex rigid; their sheaths scarcely appendaged. Bracts divaricate to reflexed. Spikelets ovate-globose. Rootstock stoloniferous. Culm 2 cm. high.

Falkland Is.; in sunny places.

C. ÆMATORRHYNCHA Desv.

(1853; including synonyms *C. campyloxys* Steud. 1855, *C. filiformis æmatorrhyncha* Kükenth., in Section 33, *Hirtæ.* 1899.)

Stoloniferous culm to 100 cm., stout, acute-angled, scabrous above. Leaves 4–8 mm., broad plane. Spikelets 4–5, upper 2–3 male, the 2–3 females thick cylindrical, to 5 cm. long, 8 mm. broad. The lowest stalked. Bracts leafy. Scales lanceolate, fuscous, awned. Utricles shorter, subtrigonal, rostrate, with spreading branches. Stigmas 3.

N. Patag., Neuquen, Carren-leofú. Magellan; Fuegia. (Brazil, etc.)

Var. CORRALENSIS (Phil.) Kükenth.

Including synonyms *C. corralensis* Phil., *C. filiformis* Speg. non Good.

Culm lower, more slender. Leaves and spikelets narrower. Specific name after the Harbor Corral in Valdivia (D.) of Sec. *Hirtæ*, 39.

Patagonia, Rio Aysen, Sta. Cruz; Magellan. Fuegia; Falkland Is.

C. ANDERSONII Boott. (in subsect. *Vulgares* of Kük.).

Culm strong, acute-angled. Leaves broad with revolute margins. Female spikelets in 2's or 3's, unequal; their scales obtuse. Utricles plano-convex, long-pediceled.

Magellan; Port Famine (and Valdivia).

C. APHYLLA Kunth. (Junciformes, 18).

Culm strong, leafless. Basilar sheaths long-mucronate. Female scales early deciduous.

Patagonia, Carren-leofú.

CAREX PATAGONICA Speg.

Culm setaceous, excelled by flaccid leaves. Spikelet subglobose.

C. ATROPICTA Steud.—Macl., p. 278.

Syn. *C. Lechleri* Phil. (Macl., p. 284); *C. fuegiana* Phil. of Section *Atratæ.*

Fuegia; Magellan; S. Patagonia, Lago Argentino, Lago Viedma, in the mountains between that lake and Laguna Tar, Lago San Martin, Rio Fósiles, Lago Buenos Aires: Falkland, fide Kükenthal in Pflanzreich., IV, 20, p. 388; also in Argentina and Chili.

C. BANKSII Boott, the var. ABBREVIATA Kükenth. (Sec. 33, Fuliginosæ.)

Spikelets 3, approximate, vertically peduncled; the terminal male all globose-ovate, short. Scales shorter than utricles.

Argentina; N. Patag., territory of Neuquen.

Add Macl., p. 279:

C. BANKSII Boott.—Macl., p. 278.

Syn. *C. germana* Boott.; *C. trifida* Franch. and its var. *Franchetii* F. Kurtz.

Fuegia; Magellan; S. Patagonia, Lago Argentino, Lago Viedma; Lago San Martin; Middle Patagonia, western part of the Chubut Territory, Rio Aysen; N. W. Patagonia, Rio Manso; N. Patagonia, Rio Carren-leofú.

Add to:

C. BONARIENSIS Desf. (Section 25, *Bracteosæ.*)

Internodes of rootstock very short. Culm 25 cm. slender, 3-angled, apically scabrous, sheathed at base. Leaves 2 mm. broad. Spike 1 cm. broad, pyramidal. Utricles 3 mm., rostrum moderate, 2-toothed at tip. Nut orbiculate-ovate, included.

Falkland Is. (Argentina, etc.).

C. CADUCA Boott.—Kükenth., in Section 19, Unciniæformes.

Rhizome lax-cespitose. Culm 8–10 cm., strict, subterete, smooth. Leaves as high, filiform, convolute, rigid, curved. Spicules androgynous, ovate-globose, 6 mm., 12–16-flowered, setaceous-bracted; male part inconspicuous, female scales ovate, obtuse, castaneous, the lower hyaline-margined, long-aristate, bract-like. Utricle equaling the scales, rusty stipitate, long-rostrate. Fruit lenticular. Stigmas 2.

Fuegia, Orange River.

C. CADUCA Boott var. ORTEGÆ (Phil.) Kükenth.

(Syn. C. *ortegæ* Phil. in Macl., p. 285.)

Culm taller, to 24 cm. Leaves more strict, pungent. Utricles exceeding the scales.

E. Fuegia; Falkland.

C. CANESCENS L.—Macl., p. 279.

Is to be deleted; not known from our district.

C. CANESCENS L. var. CURTA Good.—Macl., p. 280.

Is to be deleted, not differing from *C. canescens*.

C. CANESCENS L. var. ROBUSTIOR Blytt.—Macl., p. 280.

Syn. *C. similis* d'Urv.

Up to now known only from the southernmost part of our district and from Falkland.

C. CAPITATA L.—Macl., p. 280. Section 17, *Microcephalæ*.

S. E. Fuegia, but rare; S. Patagonia, Lago San Martin, common in swamps in altitudes of about 1,000 m.: also in the Arctic zone; in mountains of Central Europe; in Mexico; and in Argentina.

C. DARWINII Boott.—Macl., p. 280.

Syn. *C. incompta* Franch.

Spikelets numerous, in 2's or 3's. Scales dark-sanguineous, acuminate-mucronate. Utricles with 3–5 conspicuous nerves on both sides. In Cryptocarpæ sub 29.

Magellan; Port Famine. Fuegia. Chili.

Var. *Serranoi* (Phil.) To 150 cm.; leaves 10 mm. broad.

W. Patagonia; Magellan.—Var. *urolepis* (Franch.). Female scales long, and long-awned. Patagonia; Chatham Is.

The var. has culm 120–150 cm., 4 mm. thick; leaves 10 mm. wide; spikelets denser, thicker, stricter upwards; female scales fuscous.

C. DECIDUA Boott.—Macl., p. 280. (Subsec. Vulgares.)

(Syn. *Carex vulgaris* Fries, var. *antucensis* (Kunze.) Kük.

Rhizome stoloniferous, culm 10–30 cm., smooth, leafy below. Leaves equalling the culm, complicate, plane. Spicules 4–7, crowded, the terminal one gynecandrous, the laterals female, oblong or subcylindric, 1–2 cm., dense-flowered, the lowest one often pediceled and longer. Lower bracts leafy, overtipping the culm. Female scales ovate, obtuse, atro-fuscous. Utricles exceeding the scales, 3 mm.; rostrum short, fuscous, truncate. (Vulgares) No. 28.

Chili, Argentina; W. Patagonia, by Rio Aysen. Fuegia, Falkland Is. Magellan; the Cordillera of S. Chili; Chiloë I.

CAREX FESTIVA Dewey.—Macl., p. 281.

Is to be deleted; being identical with *Carex macloviana* d'Urv.

Add Macl., p. 281:

C. DUSENII Kükenth.

Female spikelets 4, many-flowered. Upper 2 male spikelets close, the lower 2 subradical. Female scales chestnut, obtuse, mucronate. Utricles 12 mm. long, rostrate. (Cupulinæ) No. 37. Stigmas 3.

Patagonia; Sta. Cruz Terr.

C. FLAVA L. var. BREVIARISTATA Kük.

(*C. oederi* Retz. var. *cataractæ.*)

Culm rigid; male spicules often gynandrous, sessile; female spicules oblong-ovate, less dense. Bracts divaricate or reflexed. Utricles 4 mm. long, less abruptly rostrate. (Not a true species but a synonym of *C. oederi.*)

S. Afr.; New Zeal.; Argentina, Patagonia, by Lago Argentino.

CAREX FUSCULA d'Urv.

Bracts divaricate, or reflexed. Limbs of rostrum spread. Scales fusco-cupreous. Utricles obsoletely nervous.

S. Patagonia; Fuegia; Falklands; also in Chili. In No. 34 (Spirostachyeæ).

P. 282: *Carex fuscula* d'Urv. is about 5–10 cm. high; but its form *indecora* Kunth. may reach 45 cm.

C. FUSCULA d'Urv. forma INDECORA (Kunth.) Kükenth.

Culm about 45 cm. high, while by the type the culm is only 5–10 cm. S. Chili, Falkland.

C. GAYANA Desv.—Macl., p. 282 (in Section Divisæ).

Lower sheaths brown. Unisexual. Utricles 2 mm. long, orbiculate-ovate, short rostrum.

Though very much akin to, it is not, as Macloskie states, identical with *C. divisa* Huds. and does not occur in Europe or Western Asia. It is met with in N. America, Fuegia and in Patagonia, especially, in the western parts of its steppe region and in the mountains up to an altitude of at least 900 m.; also in Argentina and Chili. D.

P. 282: C. GAYANA Desv. has var. *schedonautos* (Steud.) Kük.

Culm 1–2 feet, firmer. Spikelets crowded, in a compound spike interrupted at the base, 3 cm. long. Magellan, Oazy Harbor: Fuegia; N. Patag., territory of Neuquen.

C. GAYANA Desv. var. DENSA Kükenth.

Spikelets more numerous, densely crowded, nearly all males, rarely a few utricles intermingled. Scales dark fuscous. Utricle (young) 3 mm. long, lance-ovate, long-rostrate.

N. Fuegia, by Springhill.

Var. *densa* Kük. Spikelets more numerous, densely crowded, nearly all males, rarely a few utricles intermingled. Scales dark fuscous. Utricles (young) 3 mm. long, lance-ovate, long-rostrate. N. Fuegia (Dusén).

C. Germana Boott., Macl., p. 282, should be deleted, being a synonym of *C. Banksii.*

C. GOODENOUGHII Gay.

Bracts shorter than inflorescence. Otherwise as in 28 (Vulgares).

Patagonia, Rio Chubut, Carren-leofú. Also in N. Asia and N. Amer.; Chili.

P. 283; *Carex hypoleucos* Kükenth. (is *Carex macrorrhiza* Boeck, var. *simplex* Kükenth.). Culm smooth; spikelets not glomerate, but crowded into a dense ovate simple spike. Utricles large, rostrate, the base spongy, rostrum smooth at the margins.

C. INCOMPTA Franch.—Macl., p. 283.

This species is identical with *Carex Darwinii* Boott and should be treated accordingly.

CAREX INCURVA Lightf.—Macl., p. 283 (in Section *Incurvæ*, 22).

Stigmas 2; rhizome long, creeping. Utricles not marginally winged, 3 mm. long, somewhat inflated; rostrum obliquely cut. Leaves narrow, rigid, usually exceeding the culm. Spikelets 3–5, androgynous, crowded in a subglobose head; female scales broad, obtuse.

Cosmopolitan; Magellan, Sandy Point, Fuegia.

This species is found also in S. Patagonia, to the north of Lago San Martin, in swamps amongst the mountains at Rio Fósiles, in an altitude of about 1,000 m. It is less common than *C. capitata* with which it is very often associated.

C. INCURVA Lightf. forma ERECTA O. F. Lang.

Taller; spike longer and wider; utricles 4 mm. long.

W. Greenland; Norway; Magellan.

Macloskie gives a variety of *C. incurva* named *humilis* as occurring in the Falkland Ids., but I have not been able to trace his authority for this statement. As far as I am aware, neither the species itself, nor any form of it, occurs in those islands. D.

P. 283: *C. involucrata* Boott is *C. sorosia* Kunth. var. *involucrata* (Boott.) Kük. Occurs by the Rio Negro.

P. 284: *C. curtziana*, is *C. nebularum* Phil., var. *kurtziana* Kük.; occurs also at Chubut, and Rio Corcovado.

C. LECHLERI Phil. — Macl., p. 284.

This is identical with *Carex atropicta* Steud., and should be deleted.

C. LEPORINA L. — Macl., p. 284.

This species is very much akin to *C. macloviana* D'Urv., but does not coincide with that species. It is, however, identical with *C. ovalis* Good.

The present species does not belong to the flora of S. America. Several authors, for instance Desvaux and Philippi, have named it as occurring in Chili, but these statements refer to *C. macloviana*. *C. leporina* is therefore to be deleted.

C. MACLOVIANA D'Urv.

Syn. *C. festiva* Desv.; *C. propinqua* N. & M.; *C. ovalis* var. *minor* Brong.

Rhizome not long, cespitose. Culm 10–40 cm., strict, triquetrous, scabrous above, leafy below. Leaves shorter than culm, 2–3 mm. broad, plane, subrigid, lower sheaths leafless, brown. Spikelets 4–6, ovate, gynækandrous, dense flowered, crowded in a triangular-ovate bractless head, 15 mm. long. Scales ovate or obtuse, broad, hyaline at margins, or subacute, and partly rufous-margined. Utricles exceeding the scales, ovate concave-convex, 4 mm. long, becoming brown, glabrous, many-nerved, contracted at the base, winged, and erose-toothed with rather long rostrum, 2-toothed at top and hyaline. Nut small, oval, short-stipitate. Style-base equal. Stigmas 2. Var. *pseudoleporina* Kük. in Chili, and Patagonia.

Falkland Is.; Fuegia; Magellan; Patagonia, Leone Range, Gregory Bay, by Rio Sta. Cruz and in the Chubut Territory by Rio Chico; Argentina, Chili, the Andine region of Bolivia and Ecuador; Greenland, the Arctic region of Europe and the Sandwich Ids. (Ovales, No. 26.)

Add p. 284:

C. MACRORRHIZA Boeck. (sect. 24, Divisae).

Rhizome creeping, woody. Culm 15–30 cm., rigid, triquetrous, scabrous above. Leaves shorter, 3 mm. broad. Spikelets numerous, androgynous, in an oblong 3 cm. spike, bractless. Scales ovate, acute, yellowish, margins hyaline. Utricles rather longer, ovate, plane-convex, scabrous save on rostrum, short-stiped, 2-toothed. Stigmas 2. Nuts brown, oval.

N. Argentina, Patagon., San Carlos de Bariloche, by Lago Nahuelhuapi.

C. MACRORRHIZA Boeck. var. SIMPLEX Kükenth.

Culm smooth; spikelets not glomerate, but crowded into a dense ovate, simple spike. Utricles more distinctly stipitate, less spongy at base, with larger rostrum having smooth margins.

Argentina, Patagonia, San Carlos de Bariloche, N. by Lago Nahuelhuapi; Argentina; S. Patagonia by Rio Sta. Cruz. (Divisae, No. 24.)

Add Macl., p. 284:

C. MACROSOLEN Steud., Kükenth. (sect. Lupulinae).

Stoloniferous. Culm 5 cm., triquetrous, smooth, sulcate, with fuscous dry sheaths. Leaves equalling the culm, plicate, the keel prolonged to a stiff point. Spikelets 3–4; 1 terminal male, 1 cm.; 2–3 lateral females, longer and few-flowered; subradical, long-stalked, erect. Bracts leafy.

Scales lance-acuminate, rusty, marginally hyaline. Utricles longer, with a very long rostrum, 2-toothed. Nut short, obovate. Stigmas 2? (Lupulinae, No. 37.)

Patagon., Magellan, Oazy Harbor.

Macl., p. 284: *Carex magellanica* Lam. is found also in the Falkland Is. (Section 31, Limosæ).

Add Macl., p. 285:

CAREX. MARCIDA Boott (1840, with synonym *C. canescens;* Section 24, *Divisæ*) Speg., 1897, non Linn.

Rhizome woody, creeping. Culm 25–60 cm., slender, triquetrous, scabrous above, with leafless sheaths below. Leaves shorter, 2 mm. broad, above plane. Spikelets 6–10, androgynous, rarely unisexual, the lower in a long compound bractless spike. Scales lance-ovate, acuminate, with a clear nerve and hyaline margin. Utricles nearly as long, 3 mm., ovate, plane-convex, with a spongy rounded base, thick margins and long rostrum and 2-toothed hyaline mouth. Nut oval. Stigmas 2, long.

Pacific N. Amer. S. Patagon. Rio Sta. Cruz. (Spegazzini.)

C. MICROGLOCHIN Wahlenb. (Section *Paucifloræ*).

(See *Uncinia microglochin* Spreng. etc., supra p. 269.)

Described in Macl., p. 272, sub *Uncinia*, where the species itself is said to occur in our district, but such is not the case.

C. MICROGLOCHIN Wahlenb. subsp. OLIGANTHA Boott.

Syn. *C. microglochin* Spreng. var. *fuegina* Kukenth.—Macl., p. 271.

Culm several, leafy. Utricles brown-green. Rachil exsert.

In Asia and Canada—Greenland. But var. *oligantha*. (Boott) in 19 (Unciniæformes). Patagonia, Fuegia, Falklands. (The rachil is long, but not hooked.)

C. NEBULARUM Phil. Anal. Mus. Nac. Chil., Tom. 93, p. 492.

Culm apically scabrous. Utricles subalate, thick at edges, and rostrum. (Foetidæ), no. 23.

Patagonia, also Chili. Var. *Kurtziana* Kük. at Chubut, etc.

S. Fuegia; W. Magellan; S. Patagonia, by Lago San Martin and to the north of that section, by Rio Fósiles in the lowland as well as in the mountains up to 1,000 m. In Falkland Is.

Add Macl., p. 285:

Cæspitosa (vel melius subcæspitosa), culmis strictis, superne triquetris et scabris, 14–24 cm. altis, inferne vaginatis et foliatis; folia plana rigida, culmo breviora; spicæ crebræ, androgynæ, apice masculæ, in paniculam ovatam contractæ, bractea foliacea nulla vel brevissima; squamæ 4–6 mm. longæ, acuminatæ, ferrugineæ seu rufo-fuscæ, infimæ albo-carinatæ; utriculi ovati, longiuscule rostrati, enerves, rostro marginato, bifido.

S. Patagonia, Barranca Blanca emporium (Long. 68°50′ W. Gr.; Lat. 50°16′); in the valley of Pelque rivulet; Middle Patagonia, the Chubut Territory near Colonia General San Martin.

C. NEBULARUM Phil. forma MAJOR Kükenth. (Sec. 23, Foetidæ.)

Culm to 50 cm. high; leaves longer and strict; spike 3 cm., composed of glomerations of spikelets.

Argentina; Patagonia by Rio Corcovado and Lago Argentino.

C. NEBULARUM Phil. var. KURTZIANA Kükenth.

Culm smooth and more robust; leaves to 5 mm. broad; utricles orbicular-ovate, distinctly stipitate, subcordate at base, perincrassate at the wing-like margins.

Argentina; Patagonia by Rio Corcovado.

Add Macl., p. 285:

C. OEDERI Retz (1779).

Syn. *C. flava* L.

Culm 5–15 cm., smooth. Leaves exceeding the culm. 2–3 mm. broad, complicate plane, rigid. Spicules 3–4, one terminal male stalked, and 2–3 globose-ovate lateral females, dense-flowered, small, the upper sessile, the lower stalked. Utricles orbicular-ovate, 2–3 mm., abruptly narrowing to a small rostrum. (Spirostachyæ, no. 34.)

Patagonia, Lago Argentino; also over Eurasia and N. Amer.

Var. CATARACTÆ (R. Br.) Kükenth.

Syn. Macl., p. 285:

Syn. *C. Cataractæ* R. Br. Flor. Nov. Holl., I, p. 242.

Culm rigid. Male spike often gynækandrous, sessile; female oblong-ovate, less dense. Bracts divaricate, reflex. Utricle 4 mm., less abruptly rostrate.

S. Hemisphere, S. Afr., Tasmania, New Zeal., Chili. Patagon., Barilache.

P. 285. *Carex Ortegæ* Phil. is to be deleted, Kükenthal ranging it as a variety of *C. caduca* Boott; though its systematic place may be uncertain.

CAREX PEDICELLATA Phil.—Macl., p. 285.

To be eliminated, on account of its identity with *C. decidua* Boott.

C. PROPINQUA Nees et Mey.

Identical with *C. Macloviana* d'Urv. and, therefore, to be deleted.

C. PSEUDOCYPERUS L.—Macl., p. 286.

Rhizome cespitose; spikelets 4–6; above 1–3 males; the others females. Upper bracts sheathing; not the lower one. Female scales very long-awned. Female spikelets long-pediceled, becoming pendulous. Utricles coriaceous, at length reflexed, many-ribbed. Cosmopolitan. Var. *Hænkeana* (Presl.) in N. and W. Patagonia. (Pseudocypereæ), no. 35.

This species is not known from S. America, but the following varieties are:

Var. POLYSTICHA (Boeck.) Kükenth.

Scales often hairy. Utricles longer than scales, erect, becoming divaricate and reflexed, 4–5 mm., rostrum one third as long, attenuate, limbs scarcely divaricate. Culm base-sheaths often purplish and cleft.

Patagon., Rio Chubut; the Territory of Neuquen.

P. 286: Add var. *Haenkeana* (Presl) Kükenth. Scales of female flowers as long and broader, rusty. Utricles lanceolate, gradually passing to a rostrum as long, limbs scarcely diverging.

W. Patagonia, Rio Aysen; ins. Chiloë; Chili.

C. RIPARIA Curt.—Macl., p. 286.

Is to be deleted; not known from S. America.

C. RIPARIA Curt., subsp. CHILENSIS (Brongn.).

As the preceding; but utricles coriaceous, papillose, compressed trigonous, short-stalked; rostrum short, bifurcate. Female scales longer awned; utricles spindle-shaped, 7 mm. (Paludosæ), no. 38.

Patagonia, Rio Chubut and in Neuquen Territory. Also in Chili, N. Amer. and Japan, and Europe.

C. SCHEDONAUTOS Steud.—Macl., p. 286.

Has been transferred to *C. Gayana* Desv. as a variety.

C. SERRANOI Phil.—Macl., p. 287.

Has been transferred to *C. Darwinii* as a variety.

C. SIMILIS D'Urv.—Macl., p. 287.

To be deleted; identical with *C. canescens* L. var. *robusta* Blytt.

P. 287: *Carex subantarctica* Speg.—Kükenthal says: "not sufficiently known." Its scales and utricles show affinity with *C. rupestris*, but its flowers are diœcious, and he has found a bifid style in the few specimens observed.

C. SORORIA Kunth. var. INVOLUCRATA (Boott.) Kükenth.

Syn. *Carex involucrata* Boott—Macl., p. 283.

S. Brazil; S. Paraguay; Uruguay, Argentina; N. Patagonia by Rio Negro.

C. SUBANTARCTICA Speg.

Diœcious, stigmas 2; leaves crowded, 2–3 mm. broad, as high as culm, 9 cm. Spikelet solitary terminal. Not well known.

Patagonia, Chubut. (Near *Junciformes*, No. 18.)

C. TRICHODES Steud.

Stigmas 2; lax-flowered. Utricles ovate, moderately rostrate.

In Fuegia, Ushuaia; also in Andes. In no. 20. (Aciculares.)

C. TRIFIDA Cav.

Leaves broad. Female scales apically excised. Utricles membranaceous, straw-green to fuscous. Male spicules 2–4. Utricles ovate-oblong trigonous, long-stalked. In 38. (Paludosæ.)

Falkland Is.; S. Chili, also New Zealand, and Antarctic Is.

C. TRIFIDA Cav. var. FRANCHETII F. Kurtz.—Macl., p. 288.

On account of its identity with *Carex Banskii* Boott, this species should be deleted.

C. urolepis Franch. is to be transferred to *C. Darwinii* as a variety.

CAREX VALLIS-PULCHRÆ Phil.

Of no. 20, but stigmas 3; cespitose, few culms; long, smooth rostrum, 2-toothed.

Falkland Is. Also in Argentina.

Add p. 289:

C. VALLIS PULCHRÆ Phil.

Rhizome branching. Culms 3–5 cm., filiform, terete, sulcate. Leaves as high, filiform, canaliculate, obtuse, rigid. Spikelets androgynous, 5 mm. long, few-flowered, pseudolateral. Utricles just exceeding the ovate-lance scales, stipitate, obsoletely trigonal, and long-rostrate, 2-toothed. Stigmas 3.

Argentina; Chili, Falkland Is.

C. VULGARIS Fries.—Macl., p. 289.

Is to be deleted, not occurring in our district.

C. VULGARIS Fries. var. ANTUCENSIS (Kunze) Kükenth.

A dubious plant, being, according to Kükenthal, perhaps identical with *Carex decidua* Boott. Cf. Pflanzenreich, IV., 20, p. 306.

C. UROLEPIS Franch.—Macl., p. 288.

To be left out, being identical with *C. Darwinii* Boott var. *aristata* Clarke.

Fam. 12. ARACEÆ. Macl., p. 289.

PISTIA L.

P. STRATIOTES L.—Macl., p. 290.

Should be deleted.

The proper province of this species is the tropical parts of the Old and New World, but, in the latter it extends into its subtropical section, and, in S. America, reaches Paraguay and, probably, also the subtropical part of Argentina. At high floods in the River Plate basin it is, not seldom, carried down its estuary, but it is only as an occasional visitor it appears in the latitude of Buenos Aires and La Plata. It certainly does not belong to the flora of S. Argentina, and still less to that of Patagonia. There is, therefore, not the slightest doubt that it should have no place in a representation of the flora of our district.

Fam. 13. LEMNACEÆ. Duckweed.

Add Macl., p. 291:

LEMNA MINIMA Phil.

Leaves longer than in *L. valdiviana* Phil., oblong, cohering by their bases, having several roots (only 3 roots on the leaves of *L. valdiviana*). N. Patagonia, Territory of Neuquen.

L. GIBBA L. and L. VALDIVIANA Phil.—Macl., p. 291.

Should be deleted, not being known from Patagonia.

WOLFFIA Hagelm.—Macl., p. 291, as *Wolffiella.*

W. GLADIATA Hagelm.

Macloskie presumes this species to occur in Patagonia, but, for my part, I think such to be highly improbable. At any rate, it is not known from Patagonia and must, therefore, be struck out. D.

Fam. 15. CENTROLEPIDACEÆ.—Macl., p. 292.

Macl., p. 293: *Gaimardia australis* and *G. pusilla*, both of Gaud., may possibly be identical.

Fam. 16. BROMELIACEÆ.—Macl., p. 293.

TILLANDSIA L.

T. ANDICOLA Gül.—Macl., p. 293.

Should be deleted; not known from Patagonia.

FASCICULARIA Mez.

F. LITORALIS Mez.—Macl., p. 295.

Not known from Patagonia.

F. BICOLOR Mez. Bromel., p. 9.

NW. Patagonia, the litoral districts by Rio Puelo and Rio Reñihue; W. Patagonia, Guaitecas Ids.

Fam. 17. JUNCACEÆ. Rushes.—Macl., p. 295.

JUNCACEÆ: KEY TO THE GENERA (after Buchenau).

A. Flowers diœcious; plants perennial, forming cushion-masses. Foot of Andes.

b. Leaves bifarious, sheaths large, compressed; laminæ small, cylindroconical, erect. *Distichia.*

c. Female flowers sessile, concealed in a leafsheath. Sepals long, linear, convolute. Style very long. *Potosia.*

c2. Female flowers stiped, more or less exsert. Sepals short, ovate, obtuse. Style shorter. *Oxychloe.*

A2. Flowers monoclinous.

b. Flower 1, terminal, large; plants perennial. Antarctic lands.

c. Bracts small; flowers 1.5–2 cm. long; seeds scobiform. Laminæ cauliform. *Marsippospermum*, p. 295.

c2. Lower bract frondose, exceeding the flower; upper dry, equalling the flower, which is 1 cm. long. Seeds obovate. Laminæ canaliculate. *Rostkovia*, p. 296.

b2. Flowers not large, many in an inflorescence (rarely only 1 flower).

c. Shrub, 1–3 m. high. Sepals coriaceous. *Prionium.* S. Africa.

c2. Herbs. Sepals glumaceous, rarely colored. Cosmopolitan.

d. Leaf-sheaths closed. Margins of leaves ciliate. Flowers bracted; fruit capsular, 1-celled, 3-seeded. Perennial, except one. *Luzula* (*Juncoides*), p. 301.

d2. Sheaths open (except one species), overlapping at edges. Leaves glabrous. Flowers bracted or not. Fruit capsular, many-seeded. Some annuals. *Juncus*, Rush, p. 296.

Note.—*Juncodes*, or *Juncoides*, has priority over *Luzula* as the generic name.

MARSIPPOSPERMUM Desv.

Add Macl., p. 296, after line 8:

M. GRANDIFLORUM var. PHILIPPII Buch.

More slender; flowers smaller, 2 cm. long, generally 1-bract; sepals linear subulate.

Andine-Patagonian province of S. Chili.

W. Patagonia, also on the eastern slope of the Cordillera, for instance in the upper valley of Rio Aysen and to the north of Lago San Martin by Rio Fósiles, c. 900 m.; also by the upper Rio Manso.

Add Macl., p. 296:

M. REICHEI Buchen.

Rather small. Stems erect, tenacious, bract 6 cm. long. Leaves frondose, mostly 3 in a shoot, exceeding the stem (5–9 cm.), subterete; at length dividing into 3–6 filaments. Flowers 1.5 cm. long. Anthers linear, apically pointed; fruit 9 mm. long, seeds 1.7–18 mm.

SW. Patagonia, in the Baguales district, in swamps, c. 1,000 m.; to the north of Lago San Martin by Rio Fósiles in swamps, c. 1,000 m., here abundant.

ROSTKOVIA Desv.

R. MAGELLANICA (Lam.) Hook. f. — Macl., p. 296.

Syn. *R. sphærocarpa* Desv.

Leaves long-linear, sheathing, semiterete. Scapes longer, with a long bract. Perianth-leaves ovate-lanceolate; capsule exceeding? Testa of seeds coriaceous. A solitary flower below the apex.

Magellan. In cordilleras of Patagonia; also in the Falkland Ids.; South Georgia; New Zealand.

Rostkovia magellanica (Lam.) Hook. f. appears to be the proper name of Lamarck's species, first named by him *Juncus magellanicus* (Lam. 1798); next *Rostkovia sphærocarpa* Desv. (1808), and afterwards *Rostkovia magellanica* (Lam.) in Hooker's Flora Antarctica.

JUNCUS L.

J. BALTICUS L. — Macl., p. 297.

Represented in our district by the typical plant as well as by the varieties *europæus* Engelm., *litoralis* Engelm. and *mexicanus* (Willd.) Ok. (= *J. mexicanus* Willd.).

The typical plant itself is undoubtedly the commonest of these forms. It occurs not seldom abundantly on the more or less saliferous grounds of the river-valleys, at least in S. Patagonia.

J. BUFONIUS L. — Macl., p. 298.

Not rare, at least in S. and Central Patagonia; also in the Falklands Ids.

J. CHAMISSONIA Kunth. — Macl., p. 298.

Is to be transferred to *J. imbricatus* Laharp as a variety of that species.

J. CYPEROIDES Laharp. — Macl., p. 298.

Syn. *J. graminifolius* E. Mey.

Also in W. Patagonia, Chonos Archipelago.

J. DEPAUPERATUS Phil. — Macl., p. 298.

Should be deleted. Dusén's earlier statement of the occurrence of this species in Fuegia based on Buchenau's determination of his specimens is not correct. These specimens belong to *J. inconspicuus* D'Urv. of Pflanzenreich Junc., p. 169. D.

The Hatcherian specimens from Coy Inlet determined by Macloskie as *J. depauperatus*, actually belong to *J. Scheuchzerioides* Gaud.

JUNCUS DOMBEYANUS Gay.—Macl., p. 299.

Scarcely in S. Patagonia; according to Spegazzini in N. Patagonia by Rio Carren-leofú.

J. GRAMINIFOLIUS E. Mey.—Macl., p. 299.

Should be eliminated, being identical with *J. cyperoides*.

Add Macl., p. 299:

J. IMBRICATUS Lathorp var. CHAMISSONIS (Kunth). Buchenau.

Described, p. 298, as *J. chamissonis*.

N. Patagonia, near Carmen da Patagones.

J. INCONSPICUUS d'Urv., Pflanzenreich Junc., p. 169.

Syn. *J. Scheuchzerioides* Gaud. var. *inconspicuus* (d'Urv.) Hook. fil. (in Macl., p. 301).

Falkland Ids.; E. Fuegia: Coy Inlet, Patagon.

We observe that Skottsberg in his description of the Vegetation of the Falkland Islands "a Botanical Survey of the Falkland Is.," p. 19, expresses the opinion, that the specimen now being considered, which was found by him in the Falklands, is not an independent species, but only a reduced form of *J. Scheuchzeriodes* Gaud., agreeing with the variety *inconspicuus* (d'Urv.) Gaud. of that species. (See above under *J. depauperatus* Phil.) The distribution of this variety is, according to Skottsberg; Falkland, Fuegia, S. Georgia, Campbell I.

J. LESEURII Bol.—Macl., p. 299.

Also in NW. Patagonia, Rio Manso; W. Patagonia, Rio Aysen.

J. MARITIMUS Lam.—Macl., p. 299.

According to Buchenau, in Pflanzenreich, Junc., p. 154, this species, S. American, extends south into Argentina, and it would therefore not be surprising if it should be met with also in the neighboring parts of Patagonia. Any other statement of its occurrence there than Macloskie's on page 299, I have not seen; the specimens referred to by Macloskie were collected by Hatcher, no doubt in S. Patagonia. I have not seen them and, therefore, can give no definite opinion on their systematic place, but nevertheless, may be allowed to express a slight doubt of the correctness of Macloskie's determination. D.

J. MEXICANUS Willd.—Macl., p. 300.

Is to be deleted, having been transferred to *J. balticus* as a variety of that species.

J. PLANIFOLIUS R. Br.—Macl., p. 300.

Not found in Patagonia, but only its var. *demissus* (Steud.) Buchenau.

J. SCHEUCHZERIOIDES Gaud.—Macl., p. 301.

Occurs also in the Falkland Ids.; Fuegia; S. Patagonia, rather common; also in South Georgia, Kerguelen I., Campbell I., Auckland I., and the antipodes (Skottsberg).

LUZULA DC.

(Not *Juncoides* Adans.)

Add Macl., p. 301:

L. CHILENSIS Nees & Meyen.

Stems erect, 20–70 cm., leafy. Upper leaves alternate, 2–4 mm. broad, long ciliate, acutish. Inflorescence erect; bracts long, with lacerose, white prophyls. Flowers 3 mm. long, sepals lanceolate, entire, awned, inner ones shorter and broader. Stamens 6, rarely 3, shorter than the outer sepals. Style short, stigma long. Fruit broad, obliquely ovate, rusty.

S. Fuegia, Rio Azopardo; S. Patagonia, Lago Argentino, Lago Viedma, Lago San Martin; W. Patagonia, Rio Aysen; NW. Patagonia, Rio Manso; Chili.

The specimens collected in Fuegia differ from the type in having a little more remotely attached spikelets.

L. PATAGONICA Speg.—Macl., p. 302.

(Sub. *Juncoides patagonicum.*)

Hatcher's specimens belong to *Luzula alopecurus* Desv. Cf. Macl., p. 302.

This species is known to me only from Spegazzini's description. D.

LUZULA PUMILA Hook. — Macl., p. 302.

(Sub. *Juncoides pumilum.*)

According to Spegazzini, this species occurs in S. Fuegia, but, according to Buchenau, it is confined to New Zealand; I have not seen a Fuegian specimen. D.

L. RACEMOSA Desv. — Macl., p. 302.

(Sub. *Juncoides racemosum.*)

Is to be deleted. Not in our district.

In "Die Gefässpflanzen der Magellansländer" I have given this species from Buchenau's determination as indigenous to Fuegia. In Pflanzenreich Junc., p. 75, it is not stated to occur in our district, evidently because the determination has turned out to be incorrect. My own examination of the specimens has shown that, without doubt, they belong to *L. chilensis.* From typical specimens, however, they differ, as previously pointed out, in having more remotely attached spikelets. D.

L. SPICATA DC.—Macl., p. 303. (Sub *Juncoides spicatum.*)

Is to be deleted; not occurring in our district.

The specimens placed by Macloskie under this species belong to *Luzula alopecurus.*

After Macl., p. 303, line 13:

Genus 5. POTOSIA Buchenau.

Flowers diœcious, terminal (?). Male flowers, long-stalked, 1-bracted; tepals as long, glume-like; stamens 6, a third shorter; filaments very short; anthers linear, apiculate. Rudiment of a pistil.

Female flower concealed in the leaf-axil, sessile; the stigma exsert, tepals linear, convolute, their margins membranaceous, broad. Ovary narrow, attenuate to a long style; stigmas 3, long. Capsule acuminate, 3-septate. Seeds many, white.

P. CLANDESTINA (Phil. sub *Rostkovia*) Buch.

The only species. Yellow-green. Stems densely leafy, with sheaths of dead leaves. Leaves at base bifarious, at apex trifarious; their sheaths broad, rectangular, with 2 obtuse auricles, lamina rigid, linear, pungent.

Chili, at foot of Mts., N. Patag., in territory of Neuquen. D.

Genus 6. OXYCHLOE Philippi.

Flowers diœcious, terminal (?). Male flowers longer-stalked, 2-bracted; tepals glumaceous, the inner ones longer; stamens 6, shorter than the tepals; anthers linear, large, apiculate. Rudiment of a pistil.

Female flower exsert from the axil; tepals coriaceous, the margins membranaceous; ovary 3-celled, with central placentæ; ovules numerous, 2-seriate; style short; stigmas 3. Berry harder above; seeds obovate, apiculate.

O. ANDINA Philippi.

The only species forming dense cushions, massive and pungent at the surface. Leaves straw-green, each 4 cm. long, acuminate, pungent. Male tepals linear-lanceolate; female tepals round-ovate, obtuse, or mucronate. Fruit exceeding its perigonium.

Andes; N. Patagon., territory of Neuquen. D.

Fam. 18. LILIACEÆ.—Macl., p. 303.

ALLIUM L.

Add to Macl., p. 304 after line 12:

A. EUOSMUM Lk. & Ott.

Bulbous perennial, with white flowers. Leaves linear, shorter than scape. Spathe 1-valved; umbel many-flowered; perianth-leaves obtuse. Ovary 6-celled; cells 6–10-ovulate.

N. Patagonia, Rio Negro near Carmen de Patagones; Central Patagonia, Chubut Territory in the vicinity of Trelew.

Add to Macl., p. 304:

NOTOSCORDUM Kunth.

Umbels enclosed by 2 broad coriaceous bracts, united below. Tubers with thick skin, surrounded by leathery scales. Perianth-leaves connate at base. Filaments broad, sagittate. Capsule 3-lobed; cells 6-ovulate. Like *Allium*, but scentless.

N. STRIATUM (Jacq.) Kunth.

Leaves linear, white or yellow; perianth-leaves green-striped.

Canada to S. Australia.

N. Patagonia, Lower Rio Negro; widely distributed, from Canada to N. Patagonia.

BRODIÆA Sm.

B. LUZULA (Speg.) Macl.—Macl., p. 305.

Should be struck out. Macloskie's description refers to *Luzula patagonica* Speg., which, by mistake, has got a place amongst the *Brodiæa*-species. Cf. Macloskie's description of *B. luzula* with that of *Luzula patagonica*—Macl., p. 302 (sub *Juncoides*).

B. (LUZULA) ANGUSTILOBA (Speg.).—Macl., p. 305.

Should be struck out. Macloskie's description refers to the variety *angustiloba* of *B. spegazzinii* (Speg.) Macl.

B. PŒPPIGIANA (Gaq.).—Macl., p. 305.

The occurrence of this species in Patagonia is somewhat doubtful, as stated in my work "Beiträge zur Flora der Ostküste von Patagonia." D.

B. SPEGAZZINII (Speg.) Macl. var. ANGUSTILOBA (Speg.) Macl.

Syn. *B. patagonica* Speg. var. *angustiloba* Speg. Nov. Add. Flor. Patag., III., p. 173.

Description is given by Macloskie under *B. luzula angustiloba.*—Macl., p. 305.

Central Patagonia, Chubut Territory, in the vicinity of Trelew and along Rio Carren-leofú.

TRISTAGMA Poepp. Macl., p. 306.

T. AMEGHINOI (Speg.) Speg.—Macl., p. 306.

Syn. *Brodiæa ameghinoi* Speg. Plant. Pat. Austr., p. 575. *T. nivalis* Poepp. var. *angustifolia* Neger. Apud Dusén die Gefässpfl., p. 208.

Also in E. Fuegia.

Add Macl., p. 306:

T. INFLATUM Rendle. Patag. Plant., p. 325.

Glabrum; folia linearia, scapum paullo excedentia, 17–23 cm. longa et 4–5 mm. lata; scapus 14–17 cm. longus; flores 2–3; bracteæ involucrantes 2, scariosæ, lanceolatæ, acuminatæ, c. 2 cm. longæ, flores subæquantes; pedicelli 5–10 mm. longi; perianthium atrorubrum, tubo inflato, c. 1 cm. longo et 5.8 mm. diam., laciniis tubo brevioribus, linearibus, 5–7 mm. longis et basi 1.3 mm. latis, sursum sensim attenuatis, recurvis, corona deficiente; stamina 6, tubo biscriatum affixa, inclusa, filamentis tenuibus, c. 1.5 mm. longis; antheræ oblongæ, flavæ, 1.75 mm. longæ; ovarium ovatum, 1 cm. longum, stylo columnari, 1.5 mm. longo coronatum.

S. Patagonia, near Lago Argentino.

According to A. B. Rendle, very near to *T. australe* Nege., which differs in its much shorter bracts, shorter-stalked flowers and shorter perianth-lobes.

T. NIVALIS Poepp. var. ANGUSTILOBA Speg.—Macl., p. 307.

In my opinion identical with *Tristagma ameghinoi* Speg. and has, therefore, been transferred to that species. D.

T. PULCHELLUM Speg.—Macl., p. 307.

Also in S. Patagonia, Lago Argentino in the mountains on denudated ground; to the north of Lago San Martin in the mountains along the Rio Fósiles, c. 1,000 m.

Spegazzini describes the plant as having a bulb; this description is not quite correct. The subterraneous stem consists of a well-developed rhizome ending with an oval bulb. The roots emanate not from the bulb, as stated by Spegazzini, but from the rhizome.

CALLIXENE Juss.—Macl., p. 307.

The name *Callixene* of this genus should be replaced by *Luzuriaga* Ruiz et Pav. Cf. International rules of botanical nomenclature, p. 75.

Macl., p. 308: *Luzuriaga marginata* (Gærtn.) Benth & Hooker, vice *Callixene radicans;* Beagle Channel; Fuegia; and Villarina Bay. 'The right name is *Enargea*' (fide Skottsberg.).

P. 309: *Philesia buxifolia* Lam. (*P. magellanica* J. F. Gmelin is the older name. Vide Skottsberg.)

Fam. 19. AMARYLLIDACEÆ.—Macl., p. 309.

ALSTRŒMERIA L.

A. AURANTIACA Don.—Macl., p. 311.

So far as I am aware, this species does not occur in our district. D.

Add Macl., p. 312, 5 lines from foot:

ALSTRŒMERIA NANA Rendle.—Rendle Patag. Plant., p. 325.

Flowering stems 10 cm. high, 2 mm. thick, usually reddish above: scales 6–8 mm. long; stems sometimes bearing scales almost to the flower: in other cases short linear leaves at apparent nodes. Leafy stems half as long and thick as the flowering stems; the leaves 25 mm. long, 2 mm. broad. Perianth-lobes 2 cm. long, the outer 7–8 mm. broad. Stamens and style shorter than the perianth; anthers 1 mm. broad; stigmas linear.

Top of Mt. Frias and Beach of Lago Argentino.

Differs from the Andine species *A. pygmæa* Herb. (which is 1-flowered) in not having a leafy involucre around the flower, and in having narrower, less fleshy leaves. "Near *A. patagonica* which I know only from a brief description by Macloskie; stigmas elongate, broad, margined," would not apply to our plant. (A. B. Rendle.)

S. Patagonia near Lago Argentino.

A. PATAGONICA Phil.—Macl., p. 312.

Also in S. Patagonia, Puerto Comodor Rivadávia, Puerto Mazaredo, Puerto San Julian, Lago Argentino, Laguna Tar (in the valley of Arroyo Shewen); near Coy Inlet, Central Patagonia, near Lago Buenos Aires, upper Rio Chubut and Rio Sengen.

A. PYGMÆA Herb.—Macl., p. 312.

(Sub *A. pygmæa* Willd.)

Should probably be deleted. This species belongs to the flora of Peru and does not occur in Patagonia, or its occurrence here is, at least, very doubtful. According to Holmberg (Holmberg, Amarill. Argent.) this species is not observed in Patagonia. My earlier statement of its occurrence in Fuegia is incorrect. D.

Professor Skottsberg writes: "I have compared true *Alstrœmeria pygmæa* from Bolivia and Peru with this plant from Patagonia, called by Philippi *A. patagonica;* they are different species."

Fam. 20. IRIDACEÆ.—Macl., p. 312.

NEMASTYLIS Nutt.

N. FURCATA Klatt.—Macl., p. 313.

It is somewhat doubtful if this species actually occurs in the northernmost section of our district.

LIBERTIA Spreng.

L. ELEGANS Poepp.—Macl., p. 314.

Should be deleted; it does not belong to our district.

L. FORMOSA Graham.—Macl., p. 314.

N. W. Patagonia, Rio Reñihue; W. Patagonia, Rio Baker; S. Chili.

SISYRINCHIUM L.

S. CLARAZII Bak.—Macl., p. 315.

Should be deleted; not known from our district.

S. CUSPIDATUM Poepp.—Poeppig, Fragm., 3.

According to A. B. Rendle (Journal of Botany, Vol. 42, p. 326) this species is found in S. Patagonia, Lago Argentino; besides in Chili.

P. 315:

S. FILIFOLIUM Gaud.

At head of Rio Chico, Patagonia: "This seems not to be identical with the true *S. filifolium* Gaud., from the Falkland Is., but is more like *S. junceum* C. A. Meyers. It is a variable species." C. Skottsberg.

S. IRIDIFOLIUM H.B.K.—Macl., p. 316.

Should be eliminated; not in our district. Spegazzini's statement of its occurrence in Magellan is certainly wrong.

S. IRIDIFOLIUM H.B.K. var. MAJUS and var. MINUS.—Macl., p. 316.

Are unknown to me. It is very doubtful if the plants referred to are to be placed as varieties of *S. iridifolium*. D.

SYMPHYOSTEMON Miers.

S. BIFLORUS (Thunb.) Bak.—Macl., p. 318.

Macloskie remarks (Macl., p. 961) that this species should have the name of *S. odoratissimus* (Lindl.) Miers, but this is not correct. Thunberg was the first to describe the plant, viz., under the name of *gladiolus biflorus.* According to the international rules of botanical nomenclature the name of this species should be *S. biflorus.*

S. ODORATISSIMUS (Lindl.) Miers and *S. patagonicus* Speg. —Macl., p. 319.

Are to be deleted, both being synonymous with *S. biflorus.*

S. SEGETHI (Phil.).—Macl., p. 319.

Should be transferred to the following genus.

SOLENOMELUS Miers.

Rootstock short. Perianth tube slender, enlarging upwards; tubes subequal. Filaments united into a tube. Anthers short, connivent around the style, which is ciliate-stigmatic only at its exsert vertex. Capsule oblong. Flowers several in one spathe.

Found in Chili.

S. SEGETHI (Phil.) OK.

Described—Macl., p. 319, No. 5.

Central Patagonia, upper Rio Nysen, between Teka-choigue and Rio Carren-leofú; S. Patagonia, Lago Argentino.

Add:

Fam. 20 b. BURMANNIACEÆ.—Macl., p. 320.

Differ from Orchidaceæ in having stamens 3 or 6; style short, three-branched; perianth nearly regular, its inner cycle smaller; leaves basal, or merely small bracts. Herbs.

ARACHNITES Pfitz.

Flowers unisexual in reduction, the female flowers with minute staminodes. Posterior, outer segment long and bent forward; other 5-linear, sagittiform, spreading. Capsule globular, seeds minute. Root-parasite, with tuber, and scale leaves.

A. UNIFLORA Phil.

S. Chili; Valdivia; central Patagonia, Chubut Territory near Lago Fontana.

Arachnites Pfitz. has the limb of leaf suddenly contracted to a petiole; sepals long, tailed. Pfitzer & Kraenzlin make it a section of *Dendrochilum;* several species in the Orient; but no *A. uniflora* is named, and no *Dendrochilum uniflorum* in their Orchidaceæ.

Fam. 21. ORCHIDACEÆ.—Macl., p. 320.

In Engler und Prantl, Die natürlichen Pflanzenfamilien, the genus *Asarca* is not separated from the genus *Chloræa*, nor is it in Macloskie's representation of the present family. One of the most modern works on orchids is that by Fr. Kraenzlin, entitled "Orchidacearum genera et species," the vol. II, pars I (1904), of which contains the Chlorideæ. Here we find *Asarca* separated from *Chloræa.* The following enumeration of the species of our district is based on that work.

ASARCA Lindl.

Kraenzlin distinguishes this genus by (1) the union of the lateral sepals below or behind the labellum; (2) a very short column united with the claw of the labellum; (3) two fruiting glands at the base of the labellum; (4) the hollowed claw of the labellum, resembling a gland.

A. ARAUCANA Phil.

Stem 50 cm. long, leafy half-way; lower leaves sheathing, linear lanceolate, acute; cauline leaves more swollen. Spike mostly few-flowered, bracts lanceolate, surpassing the ovary. Dorsal sepal broadly ligulate, acute, scarcely concave; laterals broadly ovate, contracted to a tail; petals obovate, oblong. Nerves papillate near the base. Labellum shortly clawed with 2 basal calli; the lateral lobes diverging and reflexed, oblong rounded. Gynostemium very short. Flowers white, angled with the ovary with green lines, and green tails of the lateral sepals.

S. Patagonia, Lago Argentino; also in Chili.

A. ARANEANA Phil.

S. section of Central Chili; S. Chili; Chiloe Id.; N. W. Patagon., Rio Reñihue.

ASARCA ODORATISSIMA Poepp. et Endl.

Poepp. & Endlicher, Nov. Gen. et Spec., II, p. 13, tab. 118; Reiche, l. c., p. 17, tab. I, fig. 3. (Described sub *Chlorœa*, Macl., p. 323.)

A. BRACHYCHILA Phil.

S. Chili; N. Patagonia near Lago Nahuel-huapi. According to Reiche, l. c., p. 15, this is identical with *Asarca commersonii* (described in Macl., p. 322, no. 4).

Add Macl., p. 321:

A. APPENDICULATA Phil.

50–100 cm., with leafy base; leaves 5–6, oblong. Dorsal sepal, oblong-lanceolate, acute, concave; labellum with sub-quadrate side-lobes, and 2 minute glands.

Central Patagonia, in the andine district; Chili.

A. COMMERSONII Hook. fil.—Kraenzl. Orchid., p. 41.

Syn. *A. brachychila* Phil.; *Chlorœa Commersonii* Bronyn. Described in Macl., p. 322.

Falkland Ids.; S. Fuegia; Magellan; Patagonia, in the district of deciduous beeches, for instance at Lago Argentino, Lago Viedma, Lago Buenos Aires, Lago Fontana, upper Rio Aysen; probably it occurs still further north.

This species, at least in Fuegia and Patagonia, is an ombrophil plant and does not grow here outside the forest.

A. GLANDULIFERA Poepp. & Endl.

60 cm., the base covered by dry leaf-rosettes; no fresh leaves at anthesis. Spike many-flowered, 22 cm. long; bracts acuminate. Dorsal sepal oblong, with rounded tip; laterals with cochlear point; petals obtuse. Gynostemium with base excavated, 2-glandular. Chili; Central Patagonia, on moist ground by Rio Chubut, Rio Carren-leofú, and Rio Chico.

A. KINGII Hook. fil.—Kraenzlin Orchid, p. 42.

Syn. *Chlorœa kingii* (Hook. fil.) Macl. Described Macl., p. 322.

Magellan.

Add p. 322:

A. PLATYANTHA Reiche, fil.

External perianth-leaves the highest, obovate, obtuse; laterals ovate-lanceolate, attenuate, apically thickened; internals obovate, cuneate, varicose at the base; lip 3-lobed; external perianth-leaves half as long; lateral lobes transversely oblong. Crest transverse, branching, mid lobe lanceolate, obtuse.

Central Patagonia, in the preandine district; Central and S. Chili.

CHLORÆA Lindl.

Add Macl., p. 323:

C. BERGII Hieron.

1-flowered; petals apically papillose-toothed.

N. Patagonia, Rio Negro near Carmen de Patagones; S. Argentina, in the mountains of the Great Pampa (Pampa Grande).

C. CHOLILENSIS Speg. & Kränzl.

Labellum 3-lobed, lateral lobes oblong, papillose; central lobe triangular, prolonged. Leafy in anthesis, leaves 8, from base half way up, oblong, acute, plicate. Spike 5–7 flowered, bracts long, acuminate.

Central Patagonia, in meadows in the pre-andine district.

C. CYLINDROSTACHYA Poepp. (*C. paillosa* Phil.).

90 cm. high, leafy half way up; leaves proportionately short, oblong, subobtuse, all more or less sheathing. Spike long, about 20 cm. dense, above many-flowered. Dorsal sepal ovate-lanceolate; laterals ascending, lacerate, the tip thick and involute. Petals lanceolate from a linear base. Labellum dilated from a slight narrow base, yet not obovate. Papillæ near the magin of the base. Gynostemium three fourths the length of the posterior sepal. Flowers green, yellow, with green reticulations.

Patagonia? Chili.

C. FONKI Phil.

30 cm. high, leafy half way, leaves appressed, linear-lance, acuminate; spike 3–5-flowered. Labellum ovate-triangular, 3-lobed; lateral lobes rounded, with stalked papillæ. Chili, Chonos Archipelago, W. Patagonia.

CHLORÆA HEMICHLORIS Kränzl.

Stem 70 cm., leaves at anthesis. Spike 8–16-flowered; labellum simple-oblong, centrally retuse, sub-2-lobed. Dorsal sepal oblong; lateral broad-linear.

S. Chili; Central Patagonia, in meadows in the pre-andine district, Territory of Chubut.

C. HOOKERIANA Speg. et Kränzl.

Plants low, few-flowered; flowers broad; labellum 3-lobed, its sides continuous, with gynostemium. Sepals linear; petals ovate.

Central Patagonia, Rio Carren-leofú.

C. KRUEGERI Phil.

Leafless at anthesis. Spike 7–12-flowered, rather small. Labellum entire, oblong, sub-pandurate; 7 rows of papillæ.

W. Patagonia, Rio Reñihue.

C. LAGUNÆ PACIS Kränzl.

Homoglossal; labellum sinuously 3-lobed, its apex naked, not thickened.

Central Patagonia, in meadows in the vicinity of Laguna Paz.

C. LECHLERI Lindl.

Labellum short-clawed, margin repand. Dorsal acute petals shorter and broader than the oblong sepals.

Central Patagonia, Rio Senger.

C. ODORATISSIMA (Poepp.).—Macl., p. 323.

Is to be deleted; not in our district.

C. PATAGONICA Phil.—Macl., p. 323.

Is to be deleted, being identical with *C. piguichen* Lindl.

C. LEONTOGLOSSA Speg. et Kränzl.

Stem 30–40 cm., leafy; the leaves sheathing, oblong-lanceolate, obtuse; to 18 cm. long; leaves passing to bracts. Spike few-flowered (to 4), bracts large, ovate, acuminate, scarious; dorsal sepal ovate, acute, the laterals deflexed, similar but smaller, undulate and thickened. Petals shorter,

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ovate-oblong, subacute, retinerved; labellum narrow-clawed, ovate, subcordate, acute, but the very apex obtuse. Gynostemium slender and curved, half as long as the dorsal sepal. Flowers showy, pale saffron, marked with green.

Patagonia, by Lago Nahuel-huapi; Lago Fontana, south section of Central Chili.

C. MAGELLANICA Hook. f.

Labellum ovate-cordate, obsoletely 3-lobed, shortly unguiculate; margins inflexed, having large stiped glands. Lateral lobes partly lacerate, the intermediate axis being dilated and thick. Lateral sepals linear, thickened midway, petals ovate, obtuse, one-third shorter than the sepals. Spike 3-flowered, on a leafy scape.

Magellan Str., Elizabeth I. (by C. Darwin).

C. PRODIGIOSA Schomb. & Reich. f.

Highest petal oblong, acute, crenate; lateral petals narrow, acute, apically thickened; lower petals oblong, cuneate; labellum obsoletely 3-lobed; the lateral lobes obtuse, short, serrate anteriorly: the midlobe produced, oblong, serrate-toothed, papillose, falcate, slender in middle; few warts in the lateral lobes. Crest polydactyl at the base. Lamellæ clavate, short and long. Veins dark.

Central and South Chili; North Patagonia; Rio Stalenfu.

C. PIGUICHEN Lindl. (*C. patagonica* Phil.).

Heteroglossal; labellum rhomboid, anteriorly toothed.

N. Patagonia, Lago Nahuel-huapi; Central and South Chili.

C. PSEUDO-CAMPESTRIS Kränzl.

Heteroglossal; labellum oblong; many clavate papillæ above.

S. Patagonia, Lago Argentino in watery, grassy localities; Chili.

C. SPECIOSA Poepp.

Labellum oblong-rhomboid, with 7 lines of falcules. Petals and sepals reticulately veined; flowers handsome.

Central Patagonia, the pre-andine district.

C. albarosea, *C. pleistodactyla* and *C. spegazziniana* given by Macloskie are only manuscript names.

C. cylindrostachya Poepp., Poeppi Fragment. Synopt. Plant. Phan. Chil., p. 15; Poepp. & Endlich, Nov. Gen. and Species, I, p. 30, tab. 50; Kränzlin, l. c., p. 85, tab. IX, T. Reiche, l. c., p. 33, tab. I, fig. 6.

Central and S. Chili; Mid-Patagonia, Territory of Chubut.

SPIRANTHES L. C. Rich.

S. CHILENSIS Rich.

Sepals free, subequal, the hind one erect, conniving with the petal into a helmet, or apically spreading; the laterals fixed to the apex of the ovary, long-decurrent. Lip erect, often narrow, embracing the column, entire or 3-lobed, appendiculate inside. Column often decurrent at base in the ovary, or not produced into a free foot. Stems leafy or leafless. Flowers small or longish.

W. Patagonia, lower Rio Puelo.

Page 324, 2 lines from foot, omit S. Chili, S. Patagon. Add at foot of page:

CODONORCHIS SKOTTSBERGII Kränzl.

W. Patagon., Rio de las Minas.

C. POEPPIGII Lindl.

Syn. *Pogonia tetraphylla* Poepp.

Pogonia has sepals and petals all similar, and labellum sessile with a broad base, 3-lobed with long ridges or lines of tufts, around the long column; anthers more or less nodding; stem with one long leaf, midway, and a smaller bract near the solitary flower.

Codonorchis Lindl. has the petals exceeding the sepals; lip sometimes sessile, sometimes narrowed baseward, surrounding the column. Leaves in whorl of 3–6 on the 1-flowered scape.

It has two species, in North and South America.

Cordillera of S. Chili; W. Patagon., by upper valley of Rio Aysen.

Add p. 324:

HABENARIA Willd.

Sepals ringent, the lateral, or all spreading. Petals like them or smaller. entire or lobed. Lip mostly long-spurred, entire or deeply cleft, protruding or pendulous. Anther-cells short, the pollen-masses on long supporting cells, often spreading. Rostellum short, or coriaceous and hoodlike. Mostly erect plants with many-flowered racemes, and large flowers.

H. PAUCIFOLIA Lindl.

About 35 cm. high, leaves 3–4, lanceolate, acuminate, appressed; raceme to 5-flowers; bracts leaf-like, dorsal sepal ovate, acute; labellum with linear lateral lobes: spur filiform.

Central and South Chili; West Patagonia, backwards at least to Smith Canal; North Patagonia, by Lago Nahuel-huapi.

Fam. 23. FAGACEÆ.—Macl., p. 325.

NOTHOFAGUS Blume.

N. MONTAGNEI (Hombr. et Jacq.) Reiche.—Macl., p. 328.

A doubtful species; perhaps it represents only a form of the rather variable *N. antarctica* (Forst.) Oerst.

Page 328: *Nothofagus procera* occurs at Neuquen.

Page 328, line 4 from below, *P. pumilio*, should be *Nothofagus pumilio*. It is not *N. antarctica* (fide Skbg.).

P. 329, line 4 from foot: *Nothofagus dombeyi* occurs also in N. Patagonia, Territory of Neuquen.

Add Macl., p. 330:

N. OBLIQUA Mirbel.

Leaves elliptical or ovate, obtuse, irregularly duplicate serrate, pilose on the nerves, both sides; male flowers with perigonium broad, campanulate, sinuate-lobed; anthers obtuse, larger than filaments, apex pilose. Fruit ovoid, scales ovate-lanceolate, not spreading, but apically excised or entire or toothed.

Occurs in Chili, North Patagonia, in Territory of Neuquen (but not in W. Patagonia nor at Magellan, nor in Fuegia.—Dusén.).

N. PROCERA (Poepp. et Endl.) Oerst.—Macl., p. 328.

Not in Patagonia.

N. ALPINA (Poepp. et Endl.) Blume.—Macl., p. 331.

Is to be deleted; not in Patagonia. According to Reiche, identical with *N. procera*.

Fam. 24. URTICACEÆ.—Macl., p. 330.

URTICA L.

Delete:

U. SPATHULATA Sm.—Macl., p. 332.

Not in our district.

U. URENS Linn.

Is found also in the Falkland Is.

PILEA Lindl. (Not *Adicea* Raf. Cf. International Rules of Bot. Nomenclature, p. 77.)

P. ELLIPTICA Hook. fil.—Macl., p. 332.

Also in N. W. Patagonia, Rio Puelo and Rio Palena; W. Patagonia, Rio Aysen.

Fam. 25. PROTEACEÆ.—Macl., p. 333.

LOMATIA R. Br. (Not *Tricondylus*. Cf. International Rules of Botanical Nomenclature, p. 78.)

L. DENTATA R. Br.—Macl., p. 334. (Sub *Tricondylus*.)

Is to be deleted; not in our district.

L. FERRUGINEA R. Br.—Macl., p. 335. (Sub *Tricondylus*.)

Also in N. W. Patagonia; W. Patagonia, Rio Baker, Rio Aysen, Canal Messier, Molyneux Sound (southern limit); not in Magellan.

GUEVINA Mol.

G. AVELLANA Mol.—Macl., p. 335.

W. Patagonia, viz., its northern section.

TRICONDYLUS OBLIQUUS (R. & P.) OK.

Syn. *Lomatia obliqua* R. & P.
Occurs also in N. Patagon., at Neuquen. (Dusén.)
P. 335:

Fam. 27. MYZODENDRACEÆ.

MYZODENDRON Banks et Sol.

Add Macl., p. 337.

M. ANGULATUM Phil.—

S. Patagonia, in the district of Ultima Esperanza and the Baguales Mountains.

M. COMMERSONII Van Tieghem.—Van Tieghem in Bulletin de la Société Botanique de France, Tom. 43 (Ser. 3, Tom. III), p. 543.

Magellan.

This genus has been given the same limitation here as in Engler and Prantl, Die natürlichen Planzenfamilien. A division of same, however, has been undertaken by Van Tieghem, whose arrangement is found in the above work. The old genus *Myzodendron* he splits into not less than four separate ones, and this division he founds on the different habits of the sterile and fertile branches in the same individual, the appearance and grouping of inflorescences, the number and arrangement of flowers and nature of stamina and position of bracteæ. These genera with their species, in so far as they belong to our district, are as follows:

P. 337:

MYZODENDRON (Banks et Sol.) Van Tieghem.

M. ANGULATUM Phil.

M. COMMERSONII Van Tieghem.

M. MACROLEPIS Phil.; M. PUNCTULATUM Banks et Sol.;

M. RIOQUINOENSE OK.

ARCHIPHYLLUM Van Tieghem.

A. BRACHYSTACHYUM (DC.) Van Tieghem; A. OBLONGIFOLIUM (DC.) Van Tieghem.

Described. Macl., p. 337.

TELOPHYLLUM Van Tieghem.

T. QUADRIFLORUM (DC.) Van Tieghem.

Described sub *Myzodendron*, in Macl., p. 338.

ANGELOPOGON (DC.) Poepp. et Endl.

A. LINEARIFOLIUM Poepp. et Endl.

Described, Macl., p. 337, as *Myzod. linearif.*; also in N. Patagonia, Territory of Neuquen.

Fam. 28. SANTALACEÆ.—Macl., p. 338.

MYOSCHILOS Ruir. et Pav.

M. OBLONGUS Ruir. et Pav.—Macl., p. 339.

Also in W. Patagonia, Ultima Esperanza, Lago Argentino; Central Patagonia, the pre-andine district; Guaitecas Ids.

ARJONA Cav.

A. ADPRESSA Phil.—Macl., p. 341.

Also in E. Patagonia, Puerto Comodor Rivadávia on bushy slopes.

A. RIGIDA Miers.—Macl., p. 342.

Should be deleted; not known from our district.

Add Macl., p. 342.

A. CHUBUTENSIS Dus. n. sp. (Plate IV).

Humilis, c. 8–15 cm. alta, inflorescentia excepta, glaberrima; caulis erectus, basi brevi-ramulosus, ceterum simplex; folia brevia, rigida, callosa, linearia, stricta vel suprema, subincurvata, trigona, patentia, infima c. 1 cm. longa et 1.5 mm. lata, superiora seursim decrescentia, uninervate, nervo in facie inferiore folii distincto; inflorescentia spicata, brevis, pauciflora; bracteæ (in planta sicca) atro-brunneæ, late ovatæ, convexæ, extus pilis longis vestitæ, rigidæ, acutissimæ; perigonium infundibuliforme, extus dense sericeo-pilosum, profunde 5-fidum, lobis oblongo-ovatis, acutis, intus supra stamina linea brevi pilosa instructum, ceterum glabrum, tubo in parte superiore ampliato; stamina in ore tubi inserta, antheris poro sessilibus.

Central Patagonia, Chubut Territory, in the pre-andine district (leg. J. Högberg).

About 8–15 cm. tall and with exception of the inflorescence, glabrous, near the base shortly branched, upwards simple; leaves short, rigid, callous, linear, strict or the upper somewhat incurved, trigonal, patent, the lower about 1 cm. long, the upper decrescent, all uninervous on the underside; inflorescence spiciform, short, few flowered; bracts dark-brown (at least in the dry plant), broad ovate, cochleate, rigid, acute, on the outside covered with long hairs; perigonium funnelform, outside silky, inside with a short hairy line above the stamens, also glabrous, deeply divided into five oblong-ovate, acute lobes, tube long, ampliated upwards; stamens attached at the mouth of the tube and with nearly sessile anthers.

This species differs from all other species of the present genus in its thick, trigonal, usually strict leaves showing a single nerve on their underside. The nerve scarcely runs out into a point.

The type in Herb. Holm.

QUINCHAMALIUM Juss.—Macl., p. 342.

The species of this genus are in need of a thorough revision, but on account of want of material I have not been able to undertake it. I should not omit pointing out, though, that, according to A. B. Rendle, the species occurring in the vicinity of Lago Argentino—as far as I am aware there is only one found there—is identical with *Quinchamalium procumbens* Ruiz et Pav., which Rendle considers to be, in all probability, the same as *Q. chilense* Lam. On the other hand, it is doubtful whether Lamarck's species is identical with *Q. chilense* Lam. The last species is very unsatisfactorily described, and, according to Philippi Cat. Plant. Chil., it includes all the species of this genus. Rendle further observes, in Journal of Botany, Vol. 42, p. 327, that the specimen of *Q. dombeyi* Brongn. of the British Museum agrees with *Q. procumbens* Ruiz et Pav. From this it appears certain that a revision of this genus should result in a very considerable reduction of the number of species. D.

Fam. 31. POLYGONACEÆ.—Macl., p. 348.

RUMEX L.

R. CRISPISSIMUS OK.—Macl., p. 348.

Syn. *Rumex decumbens* Dus.

It is with some hesitation that I dismiss *R. decumbens* Dus. as synonymous with *R. crispissimus* OK. The descriptions of both species agree very well, except in one particular. According to O. Kuntze, the inner perianth-leaves of *R. crispissimus* have a globose callus. This is not the case with *R. decumbens*, although its inner perianth-leaves really are provided with callus-like swellings; but they consist of a loose, pulpose texture with pretty large and air-filled cells. With that exception, both descriptions agree and it, therefore, appears to me as if O. Kuntze, somewhat hastily, had assumed the swellings of the perianth-leaves to be callus-formations, and had not taken the trouble to ascertain if they actually were such. (Dusén.)

Spegazzini and Skottsberg unite both species into one.

P. 349: Delete *R. decumbens* Dus.; syn. of *R. crispissimus. R. decumbens* Dusén occurs also in a valley by Rio Pelque (Dusén). It is *R. crispissimus* OK., fide Spegazzini.

P. 350: *Rumex magellicanus* Grisb. is *R. crispissimus* OK. (fide Teodoro Stuckert).

Add Macl., p. 350:

RUMEX OBTUSIFOLIUS Linn.

Leaves ovate cordate, obtuse, upper leaves narrower and acute. Whorls lax, distant; inner valves of ripe calyx ovate-hastate, with basal teeth, 1 of them grain-bearing.

Falkland Is., introduced.

P. 353:

ANTIGONON Endl.

Delete.

A. LEPTOPUS Hook. et Arn.; not in our district.

MUEHLENBECKIA Meissn.

Add Macl., p. 354, line 14:

M. THAMNIFOLIA Meissn.

Glabrous shrub, branches twining, terete, sulcate, angled at apex, ochreæ long; leaves somewhat fleshy, petiolate, cordate-ovate, acute or acuminate, veinous, racemes axillary, pedicels very short, stigmas subsessile; achenes enclosed, shining, globose-ovate, with trigonal apex. Leaves larger than in *M. chilense;* racemes often paired or branched.

N. W. Patagonia, Rio Puelo.

P. 345:

PROSOPANCHE BURMEISTERI De Bary.

Is synonym of *P. americana* O. Kuntze.

P. 354, line 13, add the *genus* of Polygonaceæ:

DUSENIELLA K. Schum.

Syn. *Dusenia*, O. Hoffm. in Dusén's Beiträge zur Flora von Ostpatagonien (non *Dusenia* Broth. genus *Muscorum*).

Head homogamous, discoid, several sessile at the ends of branches; involucre many-seriate; bracts imbricate, the outer acute, the inner acuminate; receptacle slightly convex, naked; corolla tubular, regular, slightly widened above. Anthers tailed at base, the tail not partite; arms of style short, semicylindric, without adhesive hairs; fruit turbinate, silky-hairy. Pappus of 10 hyaline, pointed scales, in 2 rows.

D. PATAGONICA (O. Hoffm.).

Low annual shrub, branching from the ground; leaves linear-oblong, the lower opposite, the upper alternate.

S. Patagonia, by Rio Chubut.

Fam. 32. CHENOPODIACEÆ.—Macl., p. 354.

From my own experience, I know the Patagonian Chenopodiaceæ too little to engage in revising them. I shall, therefore, confine myself to indicating some obvious errors of Macloskie's representation, and to complete his statements of the geographical distribution of their species D.

P. 358:

CHENOPODIUM ANTARCTICUM (Hook. f., sub *Blitum*) Spegazzini (fide T. Stuckert).

Stem ascending, sparsely papillose; leaves deltoid-ovate, deeply and irregularly sinuate-dentate, the lobes lobulate; petioles as long. Flowers glomerate, the glomerules sessile, compound, axillary and in a leafy terminal spike. Leaflets of the 3-leaved perigonium overtopping the utricle, linear spatulate; seeds erect orbicular, punctulate, with an obtuse margin.

South Staten Island.

P. 361:

C. VULVARIUM Linn. (An est *Ch. album* var. *vulvarium?*)

ATRIPLEX L.

A. LAMPA Gill.—Macl., p. 364.

A characteristic steppe-bush 1.5–2 m. high, very common in N. Patagonia, for instance along Rio Limay and Rio Negro and in the northern section of the Patagonian east coast.

It alone, or in company with other steppe-bushes, covers large parts of the N. Patagonian steppe.

P. 365: *Atriplex reichii* Volkens may be *A. vulgatissima* Speg.

HALOPEPLIS Gris.

H. GILLIESI Gris.—Macl., p. 366.

Should be deleted, being identical with *Heterostachys ritteriana* (Moq.) U. Stbg. Macl., p. 368.

H. PATAGONICA (Moq.) U. Stbg.—Macl., p. 366.

Is synonymous with *Spirostachys patagonica* (Moq.) Benth.—Macl., p. 367.

SPIROSTACHYS S. Wats.

P. 367:

S. RITTERIANA (Moq.) U. Stbg.

Should be deleted; it coincides with *Heterostachys ritteriana* (Moq.) U. Stbg.

P. 367:

S. PATAGONICA (Moq.) Benth.

It is *Halopeplis patagonica* (Moq. Tand.), p. 366.

SALICORNIA L.

S. CORTICOSA Meyer.—Macl., p. 369.

According to Spegazzini, this species is very varying. In Nov. Add. Flor. Patag., III, p. 154, he cites the three following forms: *typica*, *nachtigalii* and *procumbens*, the last being identical with *Salicornia corticosa* Meyer var. *nachtigalii* Nied. *Salicornia bergii* Lor. et Nied. is probably identical with the present species.

S. DOERINGII Lor. et Nied.—Macl., p. 369.

The rank of an independent species can scarcely be given to this plant. According to Spegazzini, Nov. Add. Flor. Patag., III, p. 954, it represents only a form of *S. fruticosa* L.

S. FRUTICOSA L.—Macl., p. 370. (Not identical with *Suæda fruticosa* Forsk.)

A variable species. Spegazzini mentions two forms, viz., forma *macrostachya* Speg. and forma *doeringii* (Lor. et Nied.). In my opinion *Salicornia magellanica* Phil. is identical with the latter form. D.

S. MAGELLANICA Phil.—Macl., p. 370.

Should be deleted, being identical with a form of the preceding.

SUÆDA Forsk.

(Not *Lerchea* Hall.)

S. DIVARICATA Moq.—Macl., p. 370. (Sub *Lerchea.*)

This species has nearly the same distribution in our district as has been stated for *Atriplex lampa* Gill. It is very common along Rio Negro and in the northern section of the east coast of Patagonia.

It is a steppe bush up to 2 m. high, generally growing in dense masses and not seldom, either alone or together with *Atriplex lampa* and *Larrea divaricata* Cav. and *cuneifolia* Cav., covering large areas.

S. PATAGONICA Speg.—Macl., p. 371.

Also in Fuegia, by salt-water lagoons, in the steppe; S. Patagonia, not rare in the valley of Rio Sta. Cruz, rather rare in the valley of Rio Leona, but very common in many localities in the valley of Arroyo Shewen, nearly along its whole course.

Fam. 33. AMARANTACEÆ.

GOMPHRENA L.—Macl., p. 375.

G. PERENNIS L. and G. ROSEA Gris.

Should be deleted; not known from our district.

P. 377, no. 2, read *Tricycla.*

P. 375, headline of page: for *Nyctaginaceæ* read *Amarantaceæ.*

Fam. 35 AIZOACEÆ.—Macl., p. 377.

SESUVIUM L.

S. PORTULACASTRUM L.—Macl., p. 377.

Also in the northern section of the east coast of Patagonia; noticed by me at Puerto San José. D.

P. 377:

BOUGAINVILLÆA SPINOSA.

Occurs also in N. Patag., Territory of Neuquen (Dusén calling it *Tricycle spinosa*).

Fam. 36. PORTULACECEÆ.—Macl., p. 378.

CALANDRINIA H.B.K.

Add Macl., p. 379:

C. CÆSPITOSA Gill.—Edinburgh Journal, III, p. 356.

According to A. B. Rendle (Journal of Botany, Vol. 42, p. 328) this species is found by Lago Argentino in S. Patagonia; Cordillera of Chili.

C. DENTICULATA Gill.

Glabrous; stem woody at base, branching, prostrate, leafy; leaves linear-lanceolate, acute, fleshy, attenuate towards base; 1–4 terminal, peduncled flowers. Calyx-segments unequally toothed; style 1, long; stigmas 3-toothed, very short. Seeds wrinkled.

Var. *Echinata* Barn. Central Patagonia, Chubut Territory, in the Præandine district.

P. 379, No. 1: The correct name is *Calandrinia densiflora* Phil., but the plant found by Hatcher is *Plantago* (cfr. *monanthos* fide Dusén; see p. 736, Plate XXV, *B*).

Add Macl., p. 380, at foot of page:

C. CHUBUTENSIS Speg. (described in p. 391 as *Colobanthus chubutensis* Speg.).

P. 379:

C. DENSIFOLIA Phil.

Should be struck out; not known from our district. The specimen determined by Macloskie as *C. densifolia*, actually belongs to *Plantago barbata* Forst.

MONTIA L.

P. 381:

Montia fontana L. is represented as a synonym of *Montia rivularis* Gmel., forma *lamprosperma*) (Engl. Bot. Jahrb., VV, H. 3). It was found in South Georgia Is.; fide Skottsb. Very probably this species is to be replaced by *Montia rivularis* Gmel. subsp. *lamprosperma* Cham. My specimens collected in W. Magellan are, as far as I remember, sterile; they are, at present, not at my disposal. D.

M. GIBBA Gris.—Macl., p. 381.

Should be deleted, not being Patagonian.

MONOCOSMIA Fenzl.

Sepals persisting, dorsally gibbous, winged. Stamen 1; style 2-cleft. Embryo peripherical. A succulent annual. Flowers in axillary and terminal racemes.

M. CORRIGIOLOIDES Fenzl.

Calyx 2-leaved, sepals oval, rounded, obtuse or retuse, dorsally growing into a sac-like wing. Petals 3, rarely 4, hypogynous, oblong, free, epigynous. Stamen 1, opposite the petal; ovary free, 1-celled; ovules 2–4, basilar; style very short, bifid stigma spreading; seeds 1 or 2, lenticular. A Chilian annual herb, succulent, with rosulate, glabrous leaves, and cauline leaves alternate, exstipulate; flowers very minute, with very short pedicels; stem leafless above.

Chili; Patagonia.

Fam. 37. CARYOPHYLLACEÆ.

Add Macl., p. 383:

SILENE L.

S. INFLATA Sm. (*S. cucubalus* Wibel.). Bladder Catchfly.

Stems branched. Flowers panicled; calyx bladdery; petals bifid, naked; claws of petals wedge-shaped. Styles as long. Flowers white, drooping. Plant glaucous, differing from the common *Sileneæ* in the fruit like a blackberry.

Var. PATAGONICA Speg.—Speg. Nov. Add., IV, p. 239.

N. Patagonia, common between Carmen de Patagones and the mouth of Rio Negro. Spegazzini supposes it to be identical with *Silene behen* L. var. *cucubalus* (With.) Ok.—Macl., p. 384.

LYCHNIS L.

Add Macl., p. 384:

L. MAGELLANICA Desv. Hook. f. (Fl. Ant. 246).

(Described p. 385, as *Melandryum magellanicum* (Desv. non Desr.).)

L. ANTARCTICA Ok.—Macl., p. 384.

Should be deleted; identical with *Melandryum patagonicum* Speg. The specimen determined by Macloskie as *L. antarctica* actually belongs to *M. filifolium* Dus. See below.

Lychnis has calyx 10-nerved, 5-toothed; styles 5–4; capsule shortly 10–5 or 8–4-valved. Stamens 10.

Subg. *Agrostemma* L. has 1 species, calyx teeth linear, at length twisted.

Githago has long leafy calyx-segments, alternating with the styles, instead of being oppositistylous.

Melandryum, Roehl & Endl. is subgenus of *Lychnis* with calyx inflated, ovary 1-celled from base; capsule valves more or less cleft.

Mountains and arctic regions.

MELANDRYUM CHILENSE Gay. Rohrbach.

Syn. *Lychnis*.

Erect, simple, from a thick root, slightly hirsute; leaves linear-lanceolate, basi-attenuate, densely ciliate; cauline, few, broad membranaceous and connate at base; above acuminate, with ovate base. Flowers terminal, mostly solitary. Calyx ovate, hairy, violet; striæ meet at top. Teeth about half as long as the tube. Petals white to violaceous, apically bifid, with 2 obtuse appendages. Capsules ovate-oblong.

N. W. Patagonia, Rio Puelo; Chili.

Add Macl., p. 384:

M. CUCUBALOIDES Fenzl.

Lower leaves crowded, narrow lanceolate; cauline, few, smaller, and long acuminate. Racemes few-flowered; bracts ovate-lanceolate, densely ciliate. Calyx-striæ meeting above. Petals white, claws included, scarcely dilated; limbs small bifid, with 2 small appendages. Seeds dorsally channeled. Chilian Andes.

N. W. Patagonia, Rio Reñihue; Chili. "Distribution imperfectly known by me." D.

M. MAGELLANICUM (Desv.).

Leaves all acuminate, puberulent, linear. Flowers solitary, terminal, or in threes; seeds tubercled.

P. 384:

M. CHUBUTENSE (Speg.) Speg.

Central Patagonia, also on the mountains in the upper valley of Rio Aysen at the height of about 800 m. The specimens were, erroneously, determined by me as *M. chilense*. D.

M. DENSIFOLIUM Dus.

Perenne; rhizoma subterraneum, dense ramosum, ramis abbreviatis, 2.0–5.0 cm. altis, dense caespitosis, foliis emortuis ± depastis obtectis, superne dense foliatis; folia parva lanceolata, c. 10 mm. longa et 2.0 mm. lata, suberecta, vel vetustiora subrecurvata, obtusa, primo pubescentia, marginibus ciliolatis, mox glabrata, epetiolata, plana, nervo mediano robusto, in latere inferiore folii fortiter prominente, lateralibus tenuioribus, vaginis submembranaceis, marginibus ciliatis, inferne connatis; scapi terminales, graciles, c. 6.0 cm. alti et 1 mm. diam., striati, inferne pubescentes, superne glanduloso-pubescentes, binodosi, foliis binis ad nodos dispositis, glanduloso-pubescentibus, parvis, c. 6.0 mm. longis, sublanceolatis, basi connatis; flores erecti, solitarii; calyx campanulate inflatus, c. 12.0 mm. longus et 10.0 mm. diam., circiter ad ⅓ longitudinis lobatus, lobis semiellipticis, submucronatis, glanduloso-pubescens, striis 15, fuscoviridibus, haud anastomosantibus, trinis prope apicem loborum conjunctis exaratus; corolla paullo excedens, rosea (?); petala unguibus e basi angusta sursum valde ampliata, auriculis fere nullis, appendicibus rotundatis, plerumque subemarginatis, laminis c. 4.0 mm. longis, apice rotundatis, profunde emarginatis; styli 5; capsula sessilis.

Central Patagonia, Chubut Territory near Laguna Blanca.

Perennial; rhizome with numerous, cæspitose branchlets, clothed by old leaves more or less fragmentary and bearing a rosette of suberect or subrecurved, lanceolate and obtuse leaves 10 mm. long and 2 mm. broad, at first pubescent and marginally ciliolate, soon turning glabrous, non-petiolate, with robust middle nerve, elevated on the under side of the leaves, sheaths submembranaceous, marginally ciliate, united at base; scape about 6 cm. high and 1 mm. thick, striate, pubescent below, glandular-pubescent at top, binodose, with a pair of small, glandular-pubescent, basally united leaves at every node; flowers solitary; calyx campanulately inflated, glandular-pubescent, with 15 dark green, longitudinal lines uniting by threes near the apex of the semielliptical, submucronate lobes; petals somewhat exserted (pink?) with diminutive auricles and appendices usually emarginate, the blades being rotundate and deeply emarginate. Styles 5; capsule sessile.

Stands next to *Melandryum chubutense* Speg., which differs from the present species in smaller flowers, longer and narrower acute leaves (continuous marginally), ciliated all along the margin, and in taller scapes.

Add Macl., p. 384:

MELANDRYUM FILIFOLIUM Dus.

Dus. Neue und Seltene Gefässpfl., p. 20, Taf. 1, Fig. 4 und Taf. 7, Fig. 23–25.

Perenne; rhizoma subterraneum crassiusculum, superne c. 4.0 mm. diam., breviter pauci-ramosum, ramis tenuibus, vaginis foliorum emortuorum vestitis, apice foliis dense pennicillatim confertis præditis; folia angustissima, filiformia, c. 4.5 cm. longa et 0.5 mm. lata, haud rare leviter recurvata, glabra vel primo marginibus ciliatis, ciliis mox evanescentibus, sicca marginibus valde recurvatis, nervum medium attingentibus, epetiolata, apice callosa, acutissima, in vaginas membranaceas, breves, raptim dilatatas, marginibus ciliatas transeuntia, nervo medio valido, in facie folii inferiore valde prominente; scapi elongati, ad 22 cm. usque alti, graciles, inferne, c. 0.8 mm. crassi, substriati, glaberrimi, trinodosi, internodiis 5.0–9.0 cm. longis, ad nodos foliolati, foliolis linearibus, basin versus dilatatis, connatis, marginibus inferne ciliatis; pedicelli graciles, 3.0–6.0 cm. alti, superne glanduloso-puberuli, uniflori, solitarii vel bini trinive, e nodo supremo oriundi; flores erecti, parvi; calyx parum inflatus, c. 11.0 mm. longus et 6.0 mm. diam., fere glaber, circiter ad ⅓ longitudinis 5-lobatus, lobis ovatis, acutis, striis inter se fere æqualibus, haud connatis exaratus; corolla exserta, rosea (?); petala unguibus e basi angusta sursum sensim valde ampliata, auriculis distinctis, rotundatis, appendicibus parvis, angustis, longioribus quam brevioribus, plerumque apice emarginatis, laminis c. 14.0 mm. longis, ultra medium bilobatis, lobis linearibus, divergentibus, apice rotundatis; styli 5; stamina paullo exserta; capsula sessilis.

South Patagonia in dry steppe at Richmond farm, not far from Sta. Cruz Emporium; collected in S. Patagonia also by the Princeton University Expedition, but locality not indicated.

Perennial; rhizome upwards about 4 mm. thick, divided into few, short branchlets covered with old, fragmentary leaves and bearing at top a dense fascicle of filiform leaves about 4.5 mm. long and 0.5 mm. broad, often subrecurved, glabrous or, at first, marginally ciliolate, when dry with strongly recurved margins, the robust middle nerve very prominent underneath, callous at top, acute, sessile, abruptly passing into the broad and short, membranaceous sheaths marginally ciliate; scapes elongate, to 22 cm. tall, slender, below about 0.8 mm. thick, substriate, glabrous, trinodose with small, opposite, linear leaves, being marginally ciliate below and broader and united at base; pedicels slender, 3–6 cm. long, upwards glandulous puberulous, 1-flowered, solitary or two or three emanating from the uppermost node; flowers erect, small; calyx only somewhat inflated, about 11 mm. long and 6 mm. wide, almost glabrous, lobed to about one-third of its length with ovate, acute lobes; petals with conspicuous, rotundate auricles and small, narrow appendices, being longer than broad and usually emarginate, the blades about 14 mm. long, deeply (more than to the middle) bilobed, the lobes being linear and rounded at top; styles 5; capsule sessile.

A very well-marked species, differing from all other South American species of the present genus in the narrowness of its leaves and the smoothness of most of its parts.

P. 386:

STELLARIA.

(By Macloskie sub *Alsine.*)

STELLARIA AXILLARIS Phil.—Macl., p. 386.
(Sub *Alsine.*)

Is to be deleted, being identical with *Stellaria debilis.*

S. BOREALIS Big.—Macl., p. 386.
(Sub *Alsine.*)

Should be deleted; not in our district. The specimen determined as *S. borealis* actually belongs to *S. debilis* d'Urv.

Add Macl., p. 386:

S. CUSPIDATA Willd.—DC. Prodr., I, p. 396.

N. W. Patagonia, Rio Palena.

S. CUSPIDATA Willd. var. *alsinæformis* Naud.

Stem dichotomous, glabrous; leaves petiolate, ovate-oblong to cordate, acuminate, membranaceous, glabrous; peduncles winged; calyx basiciliate; ovaries with 30 seeds.

Central Patagonia, upper Rio Carren-leofú.

S. MEDIA Linn. Common Chickweed.

Petals cleft; styles 3; capsule opening by 6 valves; leaves ovate; the upper petiolate; stem with a row of hairs, alternating on its sides.

Stellaria (*Alsine*) *axillaris* and *borealis* must be deleted; as both the Patagonian plants referred to them by Macloskie belong to *Stellaria debilis* d'Urv.

Europe. Forma *malachioides.*

Folia obovata, acuta, sæpe magna, ad 3.5 cm. longa; pedicelli et sepala præsertim pilis longis vestita.

Magellan, Punta Arenas.

This form, marked especially by its very pilose pedicels and sepals, has the habit of *Malachium aquaticum.*

Macl., p. 387:

S. NEMORUM Linn.

The plant from Dawson Id. approaches *S. nemorum* from Costa Rica, having leaves long-petioled, acuminate, basicordate or subcordate; and like *S. media* has 2 velvet lines on the stem. Willdeman is not quite satisfied, however, as to its specific identity.

CERASTIUM L.

C. arvense var. *fuegianum* Hook. f. has axillary nests of small leaves.

C. ARVENSE L. var. NERVOSUM (Naud.)—Macl., p. 388.

Syn. *Cerastium fuegianum* Alboff.

Also in S. Fuegia, viz., in the alpine region near Ushuaia.
C. arvense L. var. *cæspitosum* Dusén. Punta Arenas.

C. COMMERSONIANUM Ser.—Macl., p. 389.

Not in our district.

C. FUEGIANUM Alboff.—Macl., p. 389.

Should be eliminated; being synonymous with *C. arvense* L. var. *nervosum* (Naud.).

C. VULGATUM Linn.—Macl., p. 390.

Sepals 5; petals 5, cleft or none; stamens 10; styles 5. Carpels opening by 10 equal teeth. Capsule curved upwards twice as long as perianth. Pedicels short.

Europe.

SAGINA L.

S. PROCUMBENS L.—Macl., p. 390.

Also in S. Fuegia, near Ushuaia; S. Patagonia, El Paso, above the mouth of Rio Sta. Cruz.

COLOBANTHUS Bartl.

C. BILLARDIERI Fenzl.—Macl., p. 391.

Should be deleted, being synonymous with *C. crassifolius* (d'Urv.) Hook. fil.

C. CHUBUTENSIS Speg.—Macl., p. 391.

Should be deleted. *C. chubutensis* Speg. is non-existent; the description of it given by Macloskie refers to *Calandrinia chubutensis* Speg. (in Macl., p. 379).

COLOBANTHUS CRASSIFOLIUS (d'Urv.) Hook. fil.—Macl., p. 392.

Syn. *C. billardieri* Fenzl.; *C. quitensis* Bartl.

Also in Central, Western and Northwestern Patagonia.

P. 391, 392: Skottsberg regards *Colobanthus saginoides* Bartl. as probably a synonym of *C. crassifolius* Hook. f. (p. 392), also of *C. billardieri* Fenzl. (p. 391); *C. crassifolius* being thus polymorphous.

C. lycopodioides Gris. and *C. lechleri* Phil. are, according to C. Reiche, Flor. Chil., III, p. 388, identical with *C. subulatus* (d'Urv.) Hook. fil. Also *C. polycnemoides* Hieron. is synonymous with the last-mentioned species.

C. subulatus (d'Urv.) Hook. f. is found also in South Georgia Id., Falklands, South Isle of New Zealand, Campbell's Isle, and Victoria, everywhere making dense masses (Skottsberg).

Colobanthus crassifolius (d'Urv.) f. Hook. is also in South Georgia Is.

AMMODENIA Gmel.

A. PEPLOIDES L.—Macl., p. 393.

Should be deleted; not in our district.

ARENARIA Willd.

A. ALSINOIDES Willd.—Macl., p. 393.

Not in our district.

A. DICRANOIDES H.B.K.—Macl., p. 394.

Not in our district.

A. LANUGINOSA Rohrb. var. *diffusa* (Ell.)—Macl., p. 394.

Not in our district.

A. patagonica Phil. is placed by Reiche as a variety of the Chilian species *Arenaria palustris* Naud., whilst Macloskie retains it as a distinct species. Spegazzini, on the other hand, subordinates both *A. palustris* and *A. patagonica* under *Arenaria serpens* H.B.K. (described in p. 394). *Arenaria andicola* Gill. is placed by Rendle and Spegazzini as a variety of *A. serpens*, whilst Reiche and Macloskie place it as a variety of *Arenaria serpylloides* Naud. The last species is given both by Reiche and Macloskie the rank of an independent species; Spegazzini places it as a variety of *A. serpens.* Having no specimens of my own of these species or varieties, excepting *A. serpens* H.B.K. var. *andicola* Rohrb., I am not in a position to give a decision. D.

SPERGULARIA J. et C. Presl.

(Non *Buda* Macl., p. 395. *Buda:* This name must be replaced by *Spergularia* J. & C. Presl.) (See the International Rules of Botanical Nomenclature, p. 79):

Thus, p. 395: *Spergularia grandis* (H.B.K. sub *Arenaria.* In Dusén's opinion this is identical with *Arenaria media* L. (non DC.) and *Tissa media* (L.) Dusén's Gefässpfl., p. 258. It is necessary to test this view, but he has not the necessary literature at hand. The correct name of the plant is probably

S. MEDIA (L.)

Mid-Patagonia, Puerto Madryn; S. Patagonia; Penguin Id., in the valley of Rio Leona, on loose sand; in the valley of Arroyo Scheuen by Yotel-Aik; Chili; probably also occurring in Brazil, but this is unknown to me. D.

S. MARINA (Dumort).

Delete; not known to occur in Patagonia.

S. PLATENSIS Fenzl.

In Chili and Argentina; Mid-Patagonia, near the mouth of Rio Chubut; South Patagonia, near the mouth of Rio Sta. Cruz.

S. GRANDIS Camb.—Macl., p. 395.

(Sub *Buda.*)

Central Patagonia, Chubut Territory; S. Patagonia, Penguin Is.; sometimes very common in the river valleys.

PARONYCHIA Juss.

P. CHILENSIS DC.—Macl., p. 396.

Also in Central Patagonia, the east coast.

ACANTHONYCHIA Rohrb.

A. RAMOSISSIMA Rohrb.—Macl., p. 397.

Also in Central Patagonia, the east coast.

Fam. 39. RANUNCULACEÆ.—Macl., p. 398.

CALTHA L.

Add Macl., p. 399:

C. ANDICOLA Gay.—Gay Flor. Chil., I, p. 49, tab. 2.

Root creeping, with remains of old leaves. Leaves long-petiolate, suborbicular, basicordate, crenate. Peduncles thick, shorter than the leaves. Perianth-leaves 5–6, white. Capsules crowded, crowned by the styles, each with 2–6 shining seeds.

N. W. Patagonia, Rio Puelo, the alpine district; cordillera of Central and South Chili.

Add Macl., p. 399:

C. APPENDICULATA Pers.

Small cæspitose plant, with leaves 3-lobed, having two dorsal appendages at the nerve; scape very short, 1-flowered; pistils 8. Magellan: Also in Falkland Is.

Add Macl., p. 399:

C. LIMBATA Schlecht.

Sepals oblong, elliptical, with a rounded appendage. Leaves thick, with a narrow, pellucid margin, obtusely lobed. Flowers not involucrate: stamens very many, anthers elliptical, basi-attenuate.

N. W. Patagonia, Rio Puelo, the alpine district; Central Patagonia, Chubut Territory, the pre-andine district.

ANEMONE L.

P. 400: *A. multifida* Poir vice———

A. DECAPETALA Arduini (fide Dusén & Skottsberg).

Only in the northernmost section o our district. The specimens collected on pampas by Rio Coy and determined as *A. decapetala* actually belong to *A. multifida* Poir (p. 401), the North American species.

A. DECAPETALA Arduini var. *patagonica* Ok.—Macl., p. 400.

Should be deleted, being identical with *A. multifida* Poir.

A. TRITERNATA Vahl.—Macl., p. 401.

Not in our district; probably synonymous with *A. decapetala.*

P. 402:

Insert *Myosurus gracilis* Speg. vice *M. aristatus* var. *gracilis* (fide C. Skottsberg).

RANUNCULUS L.

P. 408:

Ranunculus crassipes Hook. f. is *Oxygraphis cymbalaria* (Pursh) Prantl (fide Dusén).

Ranunculus alboffii Macl. should be deleted, being certainly only a form of or variety of *R. peduncularis* Sm., which is also placed by Macloskie as the variety *alboffianus* Speg. of *R. peduncularis.*

R. APIIFOLIUS Pers.—Macl., p. 406.

Should be deleted; not known from our district.

Ranunculus biternatus Smith occurs also in South Georgia Is., in Marion Is., Kerguelen, and Amsterdam Is. (Skottsb.).

R. CÆSPITOSUS Dus.—Macl., p. 407.

Also in the Falkland Is.

P. 408: *R. chilensis* DC. should be *R. minutiflorus* Bert. (fide Skottsberg).

R. CRASSIPES Hook. fil.—Macl., p. 408.

Should be struck out; not found in our district.

R. HEDERACEUS L.—Macl., p. 408.

Should be deleted; not in our district.

R. MACLOVIANUS d'Urv.—Macl., p. 410.

Also in the S. Fuegian archipelago.

Add Macl., p. 410:

R. MINUTIFLORUS Bert.

On hills around Punta Arenas, and in woods and prairies; has 3 sepals, 3 petals, distinguished by the smallness of its flowers from *R. chilensis* DC., which has mostly 8–10 petals and large flowers. Leaves of *R. minutiflorus* palmately 3-lobed, the segments also lobed. E.D.W.

RANUNCULUS MONTTEANUS Phil.—Macl., p. 410.

Also in Fuegia.

R. PATAGONICUS Sm.—Macl., p. 411.

Should be transferred to *Ranunculus peduncularis* as a variety of that species.

P. 411:

R. PEDUNCULARIS Sm.

Occurs in N. Patagon., Territory of Neuquen (Dusén).

R. PEDUNCULARIS Sm. var. POLYPETALUS.—Macl., p. 411.

Should be struck out, being identical with *R. peduncularis* Sm.

R. SAVATIERI Franch.—Macl., p. 412.

Should be deleted, being identical with *Ranunculus chilensis* DC.

R. TRULLIFOLIUS Hook. fil.—Macl., p. 412.

Also in S. Patagonia, near Lago Argentino; central Patagonia, upper Rio Carren-leofú.

HAMADRYAS Comm.

H. DELPHINI Phil.—Macl., p. 413.

(Plate I, fig. 8, of supp.).

Also in S. Patagonia, Lago Argentino, on the pampa but rare.—The plant has one or two leaves.

H. KINGII Hook. fil.—Macl., p. 413.

Also in central Patagonia, near Lago Buenos Aires.

P. 414:

H. SEMPERVIVOIDES Sprague.

Found also at Rio Fósiles (Dusén).

The description "glabrous petals and sepals" needs qualification. Dusén finds the laciniæ of the leaves glabrous; but the tomentum of the sheathing leaf extends more or less to the laciniæ; perhaps too strongly shown in the figure, plate XVI.

A typical bog plant, usually growing in great masses and forming large, solid and hard patches or mounds, being of the same aspect as those of

Donatia fascicularis Forst. It is very common in S. Patagonia in the mountains by Rio Fósiles at the level of about 1,000 m.; it occurs, however, still higher up for instance in the spring district of that river at the elevation of about 1,600 m.

Add p. 45, after line 5:

DELPHINELLA Huth.

Section of *Delphinium* L., having 2 nectaries with nerveless lateral wings and 2 naked staminodes. Carpels 3. Herbs with undivided upper leaves, and globular scaly fruits; spurs larger than the petals.

Chiefly Mediterranean and Chinese.

1. DELPHINIUM (DELPHINELLA) HALTERATUM (Sibth. & Sm.) DC.

Stem erect, branching, leaving glabrous, many-partite; floral leaves trifid, uppermost entire. Racemes lax, petals spreading, stalked, with an orbicular limb. Annual herb.

S. France to Kurdistan.

2. D. CARDIOPETALUM DC.

(Syn. *D. halteratum* DC.; fide I K.)

Stem erect, subramose; leaves glabrous, trisect; segments many-cleft, their lobes linear, those of the bracts and lower branches multifid. Racemes crowded; petals stiped, limb orbicular, basicordate. Annual herb.

Pyrenees.

Fam. 40. BERBERIDACEÆ.—Macl., p. 415.

BERBERIS L.

B. CUNEATA DC.—Macl., p. 416.

Should be deleted, being synonymous with *B. heterophylla* Juss.

B. DARWINII Hook.—Macl., p. 416.

Also in N. W. Patagonia, Rio Puelo, Rio Reñihue, Rio Palena; W. Patagonia, Rio Aysen, Central Patagonia, near Lago Buenos Aires.

BERBERIS EMPETRIFOLIA Lam.—Macl., p. 416.

Through Patagonia in its whole length, viz., in the pre-andine district and the steppe district near the Cordillera.

B. HETEROPHYLLA Juss., Califate.—Macl., p. 417.

Very common, at least in South and Central Patagonia, viz., in the whole steppe district. The shrubs vary, often man-high, produce (branches as well as roots) the most valuable firing outside the forest district.

B. ILICIFOLIA Forst.—Macl., p. 417.

Also in W. Patagonia, Rio Aysen.

B. INERMIS Pers.—Macl., p. 417.

Should be deleted, being identical with *B. microphylla* Forst.

B. MICROPHYLLA Forst.—Macl., p. 417.

Also in W. and N. W. Patagonia; S. Chili.

B. PEARCEI Phil.—Macl., p. 418.

Also in N. W. Patagonia, Rio Puelo.

Add Macl., p. 418:

B. ROTUNDIFOLIA Poepp.—

N. W. Patagonia, Rio Puelo; Chilöe I.; S. Chili.

B. RUSCIFOLIA Lam.—Macl., p. 418.

Should be deleted; not known from our district. The specimen determined as *B. ruscifolia* actually belongs to *Berberis ilicifolia* Forst.

B. VIRGATA Ruiz et Pav.—Macl., p. 418.

Should be struck out. This species belongs to the flora of Peru, but is not known from our district.

The plant reproduced in Plate XV, to which Macloskie refers, represents no *Berberis*, but *Escallonia virgata* Pers.

Fam. 42. MONIMIACEÆ.—Macl., p. 420.

LAURELIA Juss.

L. SEMPERVIRENS (Ruir et Pav.) Tul.

Also in N. W. and W. Patagonia, Rio Puelo, Rio Reñihue, Rio Corcovado, Rio Palena, Guaitecas Ids., Rio Aysen.

Fam. 44. CRUCIFERÆ.—Macl., p. 421.

Add Macl., p. 424:

MENONVILLEA PINNATIFIDA.

Erect, hoary-tomentose; stem branching leafy, leaves unequally pinnate, sessile; pinnæ long, narrow-linear, entire, acute. Spikes branching, many-flowered; flowers yellow, glabrous, with short pedicels. Silicles 2-valved, and winged.

Coquimbo.

Add Macl., p. 426:

LEPIDIUM PUBESCENS Desv.

Silicles retuse, emarginate, slightly winged. Leaves glabrous, pinnatifid with linear lobes, few-toothed. Stems and pedicels villous.

Chili, also in California.

Add Macl., p. 432, line 8:

THELYPODIUM Endl.

(Syn. *Pachypodium* Nutt.).

Like *Sisymbrium*, but siliques narrow, long, stipitate, torulose.

Sepals equal at base and petals long; anthers twisted; valves of fruit convex, with a stout rib. Style short, emarginate; seeds oblong, 1-seriate. Flowers pinkish-purple. Leaves entire, or laciniate or pinnatifid.

T. FLEXICAULE Dusén.

Patagonia, on sandy fields near Sta. Cruz.

STREPTANTHUS Nutt.

Like *Arabis*, but calyx often large; stamens longer, sometimes united; petals with twisted claws. Herbs with entire or lyrate leaves; flowers usually purplish, stigma simple. Seeds in 1 row, compressed, winged.

STREPTANTHUS TEHUELCHES (Speg.) Gilg et Muschler.

Syn. *S. symbrium tehuelches* Speg.—Speg. Nov. Add. Flor. Patag., IV., p. 218.—Macl., p. 431.

S. Patag., the east coast, central Patagonia, along Rio Mayo, Rio Senger and Rio Chubut.

HEXAPTERA Hook.

H. NORDENSKJÖLDI Dus.—Macl., p. 425.

Should be transferred to *Hexaptera cuneata* Gill. et Hook. as a variety of that species. Its name thus: *Hexaptera cuneata* Gill. et Hook. var. *nordenskjöldi* Gilg et Muschler.

Add Macl., p. 426: To *Lepidium bonariense* L. the var. *pinnatisecta* (Ok.), transferred from *Roripa pubescens* var. *pinnatisecta*, p. 435.

P. 426: *Lepidium pubescens* Desv. is not a synonym of *L. bonariense*, but a distinct species (fide Gilg & Muschler in Engler's Botan. Jahrb., Bd. 42, p. 448). It occurs in Chili, Peru and California, is not known in Patagonia.

DELPINOELLA Speg.—Macl., p. 427.

This genus should be transferred to *Coronopus* as a section of that genus; thus *Delpinoella patagonica* Speg. becomes *Coronopus patagonicus* (Speg.) Muschler.

CORONOPUS VARIABILIS Phil. prol. PINNATISECTA O. E. Schuhr.—Schuhr. Mon. Cardam, p. 432.

S. Patagonia, Rio Sta. Cruz; Central Patagonia, Rio Carren-leofú; S. Chili.

CORONOPUS (L.) Gaertn.—Macl., p. 427.

The following summary of the Patagonian species of this genus is based on the recent paper of Reno Muschler, in Engler's Botan. Jahrb., Bd. 21, p. 111.

Note by Macloskie.—Muschler's revision collects into one genus, *Coronopus* (L.) Gaertn. about 45 species, of all countries, hitherto scattered among half a dozen different genera; all of them short-fruited, and with the characters of *Coronopus* as in Macl., p. 427, to which some negative characters may be added; that the fruits are not pendulous, nor winged, rarely cuneate at base; the style is short, often very short, and the reticulation of the seeds almost obsolete. The illustrations given furnish the differences of fruit and of floral plan on which the order is broken up into sections. Muschler boils down the 45 species of several genera into ten species of a single genus; with however a subgenus, and three sections, and other subspecies, and varieties, and "forms." Each of his species is not a unit, but a combination of units, as he declares. This course appears to us to be practically convenient, rather than theoretically scientific; to be a striking instance of the pragmatistic method of dealing with a troublesome case. His first section, *Carara* DC., has subreniform silicules, with thick, conical style, the valves reticulate-rugose all round, and marginally toothed. Species *verrucarius* and *violaceus*, spreading through the Old World; and one of the varieties (*C. verrucarius procumbens;* syn. *C. Ruellii* All.) reaches America as far as Chili, as an immigrant. (Probably my citation of it as found in Patagonia was an error: Muschler observes that though Dusén collected in the same location as Hatcher, he did not find this species.)

The second of Muschler's sections, *Nasturtiolum* DC. has the silicle dehiscing into 2 cocci, its stigma is a third as long as the septum, or none; only 4 glands on the receptacle, and these are mere rudiments. This section *Nasturtiolum* has 3 species, of which *C. integrifolius* is African, extending to the Orient; and *C. englerianus* Muschl. is confined to East Africa or Mozambique. And the third species *C. didymus* (L.) Sm., is unique both in its reduction of parts and in its cosmopolitan distribution. It is found in North and South America, and in Europe and Africa, and even in Australia. Muschler regards it as an antique form, which originated in South America, and has spread thence over all the continents. On the other hand, he regards *integrifolium* as having tropical Africa as its fatherland, whilst he seems to think that *C. englerianus* was born in the Lake District of Eastern Africa. *C. didymus* (L.) Sm., is represented by him as originating in our Patagonian area, and having migrated thence to other parts of America, and as now spreading over the world. It may have no petals, and mostly has only 2 stamens; and the fewness of its seeds is counterbalanced by the abundance of its flowers.

The section *Cotyliscus* (Desv. pro gen.) DC. has two species, both of them African, easily recognizable by the convex-concave silicle.

The last section, *Delpinoella* (Speg.) Muschl. was introduced by Spegazzini, as a southern South American genus, and is described in Macl., p. 427. Its silicle is cordate, and its sepals persisting, and its valves foveolate, or pitted, and stigma capitate. Of its three species, one, *C. serratus*, belongs to Brazil, the other two, *C. patagonicus* (Speg.) Muschl., and *C. rhytidocarpus* (Hook.) Macl., are Patagonian.—*Hactenus* G. M.

CORONOPUS DIDYMUS (L.) Sm. (*Brief conspectus*).

Styles rudimentary or none; leaves pinnatifid.

Subspecies EUDIDYMUS Muschl.

Silicles 2–3 mm. broad, fruiting racemes dense, pedicels erect or suberect. Almost cosmopolitan. Its var. *C. didymus* (L.) Sm., subsp. *eudidymus* var. *macrocarpus* Muschl.

Plants rather large, to 25 cm. high, with simple white hairs, rather long, silicles 2–3.5 mm. broad. Its forma *pectinatus* (DC.) Muschl. (syn. *Senebiera pectinata* DC.)

Patagonia, Ushuaia, Fuegia. Also in Brazil, Madagascar, Madeira, and in Eastern Asia.

C. DIDYMUS (L.) Sm. subsp. AUSTRALIS (Hook.) Muschl.

(Syn. *C. australis* Hook. f. in Macl., p. 128.)

In Fuegia, by Cape Horn. Forma *pectinatus* (DC.) Muschl. (*Senebiera pectinata* DC.); Patagonia, by Ushuaia.

Subgenus DELPINOELLA Muschl. (Described pro gen. in Macl., p. 427.)

C. PATAGONICUS (Speg.) Muschl.

(Described, l. c., sub. Syn. *Delpinoella patagonica* Speg.)

S. Patagonia, between S. Julian and Rio Deseado.

C. RHYTIDOCARPUS (Hook.) Macl.

(Described in Macl., p. 428. Patagonia, rather rare.)

C. AUSTRALIS (Hook. f.).

At Cape Horn (by Reiche).

P. 427: Change *Delpinoella patagonica* Speg., so as to be *Coronopus patagonicus* (Speg.) Muschl. W. Patagon., Rio Aysen; Rio Palena; Cordillera of Chili.

P. 428: The name *Coronopus coronopus* (L.) Karst. is to be *C. verrucarius* (Gars.) Muschler et Thellung; and should probably be deleted, as non-Patagonian.

C. VULGARIS Phil.—Schulz. Mon. Cardam, p. 543.

Central Patagonia, Rio Carren-leofú; Cordillera of Chubut.

C. VULGARIS Phil. var. MARGINATA (Phil.) O. E. Schulz.—Schulz, Mon. Cardam, p. 545.

N. W. Patagonia, Rio Palena.

C. CHILENSIS DC. var. ANGUSTIFOLIA O. E. Schulz.—Schulz, Mon. Cardam., p. 445.

W. Patagonia, Rio Aysen; Central and South Chili.

C. CORDATA Barn.—Schulz, Mon. Cardam., p. 429.

Central Patagonia, near Lago Buenos Aires; Cordillera of Central and South Chili.

C. CORDATA Barn. var. CALBUCANA Phil.—Schulz, Mon. Cardam., p. 430.

N. W. Patagonia, Rio Manso; S. Chili.

C. GERANIIFOLIA (Poir.) DC.—Schulz, Mon. Cardam., p. 584.

Fuegia; Magellan; N. W. Patagonia, Rio Palena, Rio Reñihue; not outside the forest district.

C. GLACIALIS (Forst.) DC.—Schulz, Mon. Cardam., p. 540.

Fuegia; Magellan; the wooded part of West Patagonia in all its length.

C. GLACIALIS (Forst.) DC. var. PUBESCENS (Phil.) O. E. Schulz.—Schulz, Mon. Cardam., p. 541.

Magellan; W. Patagonia, Rio Aysen.

C. GLACIALIS (Forst.) DC. subsp. LITORALIS (Phil.) O. E. Schulz.—Schulz, Mon. Cardam., p. 541.

N. W. Patagonia, Rio Palena, Freteem Corcovado; Chili Australis.

Coronopus glacialis (Forst.) DC. prol. subcarnosa (Hook. fil.) O. E. Schulz.—Schulz, Mon. Cardam., p. 542.

Falkland I.; Fuegia Australis; Magellan; W. Patagonia, Rio Palena; Chiloë I.; Central Chili; Campbell I.

C. integrifolia Phil.—Schulz, Mon. Cardam., p. 430.

Central Patagonia, Rio Chubut, Lago Blanco, Teka Choike, Rio Carren-leofú.

C. rostrata Gris.—Schulz, Mon. Cardam., p. 433.

According to Spegazzini in Central Patagonia, upper Rio Chubut, Rio Aysen.

C. rostrata Gris. var. dichondroides Speg.—Speg., Nov. Add. Flor. Patag., IV, p. 212; Schulz, Mon. Cardam.

Central Patagonia, Rio Chubut.

C. tenuirostris Hook. et Arn. subsp. Reicheana O. E. Shulz.—Schulz, Mon. Cardam., p. 493.

Central Patagonia, Rio Corcovado, Cordillera of Chubut.

C. tuberosa (Domb.) DC. var. velutina Speg.—Speg. Nov. Add. Flor. Patag., IV, p. 212; Schulz, Mon. Cardam., p. 490.

Central Patagonia, western section of Chubut Territory.

C. valdiviana Phil. var. callitrichoides Speg.—Schulz, Mon. Cardam., p. 446.

Central Patagonia, Rio Carren-leofú; N. Patagonia, Carmen de Patagones; S. Chili.

C. variabilis Phil.—Schulz, Mon. Cardam., p. 431.

Thlapsi alpestre Linn.

The type is scarcely found in S. Amer. (Dusén).

Add:

THLASPI ALPESTRE L. var. GRACILE (Phil.) Gilg & Muschler. (Synonym.)

Glabrous, simple; radical leaves rosulate, bright green, oblong, attenuate to a petiole, obsoletely toothed; cauline leaves auricled, semiamplexicaul, distant. Raceme lax; silicle obovate, long-attenuate at base, its apex nearly truncate, as long as the pedicel. Style one third as long.

Central Chili, in the Cordillera; eastern slopes of the Cordillera of Valdivia; S. Patagonia, in the mountains near Lago Argentino.

Note by Gilg & Muschler (Engler's Bot. Jahrb., Bd. 42, p. 453).—This variety is much more robust than the type. The specimens of *Thlapsi gracile* Phil., collected by Mr. Prichard in the district of Lago Argentino (see Journal of Botany, Vol. 42, p. 329), are, however, much more slender than the type.

P. 429: *Thlaspi glaucophyllum* Barn. (No. 2) is only a var. of *T. magellanicum.* Thus *Thlaspi magellanicum* Com. var. *glaucophyllum* (Barn.) with synonym. *T. glaucophyllum* Barn.

P. 429 (No. 3): The authority of *Thlaspi magellanicum* is Commerson (1806). (Persoon gave the same name in 1807.)

Add Macl., p. 429:

T. ANDICOLA Hook. & Arn.

Note.—Reiche in his Flora de Chile, l. 169, gives *T. andicola* as an independent species. Gilg & Muschler are of the same opinion. Skottsberg (Engler's Bot. Jahrb., Bd. 42, p. 452) regards *T. andicola* as identical with *T. magellanicum.* (See Skottsberg, zur Flora des Feuerlandes, p. 18; Wissenschaftliche Ergebnisse der Schwedischen Südpolarexpedition 1901–1903, 4 Lief. 4.) Dusén regards this opinion as well-founded, and consequently accepts Skottsberg's arrangement.

Common in the Fuegian and Patagonian steppes, especially in the remote southern and western sections; also in the mountains of Western Patagonia, as in the upper valley of Rio Aysen, about 1,200 m. at Arroyo Scheuen.

Sisymbrium sagittatum Hook. & Arn. and *Sophia sagittata* Hook. & Arn. infra, p. 449, are identical with each other, and both synonyms of *Thlaspi magellanicum* Comm.

SISYMBRIUM Linn.

P. 430: The type of species *Sisymbrium andinum* Phil. is not found in Patagonia. The plant so named in p. 430 is a variety, thus: *S. andinum* Phil. var. *pubescens* Gilg et Muschler (syn. *S. andinum* Macl. non Phil.). Description as p. 430, No. 2. Occurs in Patagonia, by Rio St. Cruz, and Gulf of St. George.

P. 431: Insert at top. The name *Sisymbrium magellanicum* (Pers.) Hook. f. has precedence of *S. maclovianum* Gaud., and of *S. fuegianum* Speg., described on p. 431, No. 4. Other synonyms are *Schizopetalum fuegianum* (?) Speg., *Brassica magellanica* Persoon, *Arabis magellanica* Dusén. It occurs in Fuegia, Magellan, S. Patagonia, in upper valley of Rio Gallegos, in the forest district of Lago Argentino, by Lago Viedma, by borders of woods at 500–900 m.; and near woods by Rio Fossiles at 950 m.

Add Macl., p. 431:

S. SAGITTATUM Hook. et Arn.—Macl.. p. 449.

(Sub *Sophia sagittata* Hook. et Arn.)

The species with its numerous forms, by Macloskie brought to the genus *Sophia*, has its natural place amongst the species of the genus *Sisymbrium*.

S. SIMPSONI Phil.

Perennial, glabrous, leaves oval, serrate, truncate, 2–3 coarse teeth, the lower petioled, the upper sessile, sepals obtuse, half as long as petals. Silicles linear, attenuate both ways, hairy, exceeding the peduncle.

In W. Patagon., by Rio Aysen; rather rare.

P. 431: Delete *Sisymbrium tehuelches* Speg. It is only a synonym of *Streptanthus tehuelches* (Speg.) Gilg & Musch.

Delete *Sisymbrium sophia* L., as it belongs to genus *Descurainea*, p. 447.

THELYPODIUM Endl.

Add Macl., p. 432, after line 7:

Pods teretish, valves 1-nerved, seeds in one row, oblong, marginless; cotyledons obliquely incumbent; flowers large, purplish to white.

T. FLEXICAULE (Dus.) Desv. Gilg & Musch.

Sepals narrow, equal at base; anthers linear, curved. Petals with narrow claw, flat, much exceeding the sepals.

S. Patagonia, near mouth of Rio Gallegos; on steppe by Richmond farm near Sta. Cruz Emporium.

P. 432: Delete *Brassica magellanica* Pers.; its correct name is *Sisymbrium magellanicum* (Pers.) Hook. fil., on p. 431.

Add Macl., p. 432:

SINAPIS ALBA Linn. White Mustard.

Erect, with pinnatifid leaves, having large terminal lobe; fruit constricted between the seeds; beak long and flat. Terminal raceme of yellow flowers.

Falkland Is.

P. 432:

BRASSICA L.

B. MAGELLANICA Pers.

Should be deleted, being identical with *Sisymbrium magellanicum* Hook. fil.

RORIPA Scop. (*Nasturtium* R. Br.).

R. PUBESCENS PINNATISECTA (Ok.)

Should be transferred to the genus *Lepidium* as *L. bonariense* L., var. *pinnatisectum* Ok.

CARDAMINE L.—Macl., p. 435.

The corrections are here so numerous that it seems to me necessary to give a quite new explanation of the species. Before doing so, I remark that the following are to be deleted:

The plants referred to: *C. amara* L., *C. antiscorbutica* Banks & Sol., *C. hirsuta* L. and its var. *magellanica* (Phil.), *C. strictula* Steud., and perhaps *C. ciliata* Phil., all belong to *Cardamine glacialis* (Forst.) Hook. f.

C. corymbosa Hook. f., not in this region.

C. pygmæa Dus. belongs really to genus *Nasturtium* (Roripa); but specifically is scarcely determinable.

C. rostrata Gris. var. *dichondroides* Speg. is identical with *C. integrifolia* Phil.

The following species should also probably be deleted:

C. ciliata Phil.—not mentioned in Gilg & Muschler's *Synopsis of S. American Cruciferæ;* perhaps identical with *C. glacialis.*

C. ramosissima Steud., identical with *C. flaccida* Cham. & Schlecht., which occurs in Chili, perhaps also in Patagon., according to Spegazzini; not mentioned in Schulz's monograph of *Cardamine.*

P. 435: *C. callitrichoides* Speg. is to be transferred to *C. valdiviana* Phil. as a variety; and *C. nana* Barn. to *C. chilensis* DC. as a variety. And some new species are to be added. Dr. Dusén has furnished the following new enumeration of the Patagonian and Fuegian species of this genus, based on O. E. Schulz, *Monographie der Gattung Cardamine,* in Engler's Bot. Jahrb., 32 (1907), and on Gilg & Muschler, *Aufzählung aller zur Zeit bekannten südamerikanischen Cruciferen,* in Engler's Bot. Jahrb., 42 (1909), referring chiefly to the former of these papers.

1. CARDAMINE CHILENSIS DC.

Leaves trisect, hairy above, the segments subpetiolate, ovate-lanceolate, crenate. Stem subascending; petals oblong, white, longer than calyx. Silique linear, glabrous, slender; its apex resembling the continued silique.

Var. *angustifolia* O. E. Schultz.

Central and South Chili; W. Patagon., by Rio Aysen.

2. C. CHILENSIS DC. var. NANA (Barn.).

(Described p. 437, No. 9.)

Syn. *Cardamine nana* Barn.

C. HIRSUTA Hook., non Linn. and C. HIRSUTA MAGELLANICA (Ph.)

Probably identical with *C. glacialis* (Forst.) DC.

C. CHILENSIS var. ANGUSTIFOLIA O. E. Schulz.

W. Patagon., Rio Aysen; Central and S. Chili.

3. C. CORDATA Barn.

Hairy perennial, simple, erect, 10–20 cm. high. Petioles 3–5 cm. Leaves simple, orbicular, angular-dentate, sometimes a pair of leaflets on the petiole. Peduncles 5–10 mm.; petals 7 mm., twice as long as sepals. Racemes short, siliques erect, seeds bordered.

Cordillera of Central and S. Chili; Mid Patagon., near Lago Buenos Aires.

Page 435, etc.:

C. CORDATA Barn. prol. CALBUCANA (Phil.) O. E. Schulz.

Leaves radical, rosulate, unequally pinnate, 1–2 prs. of leaflets, oval-oblong. Racemes 6-flowered. Stigma capitate, 2-lobed.

At Volcano Calbuco, in Valdivia; Cordillera of Central and S. Chili; N. W. Patagon., Rio Manso.

4. C. GERANIIFOLIA (Poir.) DC., described p. 436, No. 6 (*Dentaria* in Reiche).

Fuegia and Magellan; N. W. Patagonia, Rio Palena, Rio Reñihue.

5. C. GLACIALIS (Forst.) DC. Syn. *C. amara* Macl., non L.
Syn. *C. antiscorbutica* Banks et Sol.

Leaves petiolate, pinnatisect, subciliate; lower segments sessile, bijugous, very small: terminal leaf very large, reniform, petiolate. Flowers white, siliques subfiliform, erect.

Fuegia, nearly under the snow.

Also a var. with all the leaves unijugous, and a terminal leaf-segment.

Falkland Is.; Fuegia, Magellan; S. Patagon.; W. Patagon.; Rio Aysen, Puerto Volcan.; N. Patagon., in the district of Nahuel-huapi.

C. GLACIALIS (Forst.) DC. var. PUBESCENS (Phil.) O. E. Schulz.

Magellan; W. Patagon., Rio Aysen.

C. GLACIALIS (Forst.) DC. subsp. LITORALIS (Phil.) O. E. Schulz.

Leaves pinnatisect, subciliate, the lower segments, 2, sessile, very small, and a longer terminal segment, which is reniform, petiolulate. Siliques erect, filiform. Flowers white.

S. Chili; N. W. Patagon., Rio Palena; Fretum Corcovado. In wet parts of Fuegia, mostly coming into flower under the snow.

C. GLACIALIS (Forst.) DC. prol. SUBCARNOSA (Hook. fil.) O. E. Schulz.

Cordillera of Central Chili; Chiloe Id.; Campbell Id.; Falkland Is.; Fuegia, at Orange Harbor; Magellan, N. W. Patagon., by Rio Palena.

6. CARDAMINE INTEGRIFOLIA Phil.

Syn. *C. rostrata* Gris var. *dichondroides* Speg. (Described Macl., p. 438, No. 13, as *rostrata dichondroides*).

W. Patagonia in subandine and andine district by Rio Chubut, and Rio Carren-leofú.

C. PRATENSIS Linn.

Syn. *C. vulgaris* Phil.

Pubescent, erect annual, leaves pinnatisect, the segments of the radical leaves roundish, of the cauline leaves lanceolate, entire. Style very short, scarcely more slender than the silique. Petals white, three times as long as sepals.

Europe, Asia, Peru.

Note.—C. pratensis L. is stated by A. B. Rendle to occur in S. Patagonia, by Lago Argentino (Journal of Botany, Vol. 42, 1901, p. 328). According to O. E. Schulz it does not occur in S. America. Possibly Rendle's determination may refer to *C. vulgaris* Phil., which, according to Gilg & Muschler in Engler's Bot. Jahrb., Bd. 42, p. 462, replaces *C. pratensis* in Chili.

7. C. PYGMÆA Dus.

Really belongs to the genus *Nasturtium*.

8. C. ROSTRATA Griseb., described p. 438, No. 13.

According to Spegazzini, in N. W. Patagon., by Rio Carren-leofú, Rio Aysen, and Rio Chubut. Not mentioned by Gilg & Muschler as belonging to the Patagonian flora.

9. C. TENUIROSTRIS Hook. & Arn.

Hairy. Leaves pinnate, not lyrate; 2 pairs, linear, acute and entire. Corolla twice as long as calyx; siliques erect, slender, 2 cm. on pedicel of 7 mm., ending in a point.—Subsp. *reichiana* O. E. Schulz.

10. C. TUBEROSA DC.

Radical leaves glabrous, long-petioled, reniform. Cauline leaves partly 3-sect; root tuberous. Perennial. Petals thrice as long as sepals. Young silique linear, acuminate in the short style. Var. *velutina* Speg.

Central Chili; N. W. Patagonia by Rio Corcovado; W. Patagon. in the andine district of Chubut.

C. TUBEROSA DC. var. VELUTINA Speg., described p. 439.

Mid Patagonia, Western section of the Territory of Chubut, by Putrachoique.

10. C. VALDIVIANA Phil. var. CALLITRICHOIDES (Speg.) O. E. Schulz.
Syn. *C. callitrichoides* Speg., described p. 436, No. 3.

S. Chili; W. Patagon., by Rio Carren-leofú; by Rio Negro.

11. C. VARIABILIS Phil.

Erect, glabrous herbs, 15–30 cm. high; lower leaves long-petioled, most of them entire, ovate, obtusely dentate; the upper cauline leaves with 2 lobules which are linear, entire, or deeply toothed. Silique narrow, thrice as long as the pedicel. Flowers white. Seeds about 16, oblong, narrowly winged.

Southern Chili; N. W. Patagon., by Rio Palena, Rio Reñihue, Rio Aysen.

C. VARIABILIS Phil. prol. PINNATISECTA O. E. Schulz.

Lowest cauline leaves often simple; the next are 1–3 pairs; terminal leaflets rather large, ovate, 2–3-crenate-toothed on each side, subsessile; lateral leaflets oblong, entire or few-dentate, gradually smaller. Upper cauline short-petiolate, 2–1-paired. Leaflets narrower and fewer-toothed; terminal often trifid, 33 mm. long, 15 mm. broad; uppermost sometimes sessile and simple.

Chili by Carren-leofú; S. Patagon. by Rio Sta. Cruz.

C. VULGARIS Phil. var. MARGINATA (Phil.) O. E. Schulz.
Syn. *C. marginata* Phil.

Hairy. Lower leaves truncate; upper of 5 linear leaflets, entire, but the terminal 3-toothed. Raceme of 5–7 flowers, not axillary. Silicles 15 mm. by 2 mm., strongly margined, their pedicel 5 mm. Style acute. Petals twice as long as sepals.

Chilian, Mid Patagonia, Cordillera of Chubut, Rio Carren-leofú. N. W. Patagonia by Rio Palena.

CARDAMINE TENUIROSTRIS Hook. et Arn. subsp. REICHIANA O. E. Schulz.

Is in Central Patagonia, Rio Corcovado, Cordillera of Chubut.

Add:

SCHIZOPETALUM Sims.

S. (?) FUEGIANUM Speg.—Macl., p. 439.

Should be deleted, being identical with *Sisymbrium magellanicum* (Pers.) Hook. fil.

LESQUERELLA S. Wats.

L. MONTEVIDENSIS (Eichl.) Wats.—Macl., p. 440.

Occurs in Uruguay; N. Patagon., by Rio Negro; Mid. Patag., east coast, by Puerto Cracker. (Dusén.)

According to Macloskie *Vesicaria arctica* Barn. is identical with the present species. This is an error and *L. montevidensis* consequently does not occur in Arctic and N. America.

L. MENDOCINA (Phil.) F. Kurtz.—Macl., p. 440.

Should be deleted as a synonym of *L. montevidensis*.

HUTCHINSIA R. Br.

H. PROCUMBENS.

Syn. *H. reticulata* Gris.—Macl., p. 440.

Localities by Macloskie; besides in S. Patagonia, viz., in centre of Sta. Cruz Territory; Central Patagonia, along Rio Chubut.

P. 441: Instead of *Bursa* substitute *Capsella bursa pastoris* Moench.

Pod obcordate, with narrow partition. Root leaves pinnatifid or toothed; stem leaves sagittate. Localities per Macloskie.

Differs somewhat from the European form of Shepherd's Purse; is slightly velvety, with small leaves, the lobes acute. In fruit 30 cm. high. E. D. W.

The plant referred to as *Bursa procumbens* (L.) OK. and *Hutchinsia* in p. 441, is *Hutchinsia reticulata* Gris. *Bursa* (*Capsella*) *procumbens* does not occur in Patagonia, and should be deleted.

Draba species: See Gilg on American species of *Draba*, *Beiblatt* of Engler's *Botanische Jahrbücher* (1908).

P. 442:

DRABA L.—Macl., p. 441.

D. ARGENTINA Speg.

To be deleted, as it is only a synonym of *D. australis* Hook. fil.

D. BRACKENRIDGEI A. Gray.

Should be deleted, as it is only a synonym of *D. macleanii* Hook. f., belonging to Peru and Bolivia (and not yet found in Patagonia).

P. 443:

D. FALKLANDICA Hook. f.

Was found in S. Patagon., to the north of Lago San Martin, on the mountains, along Rio Fósiles, about 100 m. (Dusén.)

D. FUNICULOSA Hook. f.

Was found also in Magellan, by Cabo Negro.

P. 444:

D. GRAMINIFOLIA Speg.

To be removed to genus *Onuris*. *D. hatcheriana* Gilg to be *Onuris hatcheriana* (Gilg).

P. 445:

D. INCANA Linn.

To be deleted. The specimen belongs to *D. magellanica* (fide Dusén).

D. KARRAIKENSIS Speg.

To be removed to genus *Sarcodraba*.

P. 446:

D. MONANTHA Gilg.

To be removed to genus *Eudema*, including its var. *microphylla*.

D. SPEGAZZINIANA Dus.

To be removed to genus *Onuris*.

Add Macl., p. 447, after line 4:

SARCODRABA Gilg & Muschler.

Close to *Draba*, but easily separable through its turgid silicles; the midnerve of its valves strongly developed; and its fleshy leaves suffruticose;

stem woody, thick, branching, sending up many floriferous stalks, leafy at top. Leaves crowded at base, above distant, thick, and rather large, serrate, incised. Flowers somewhat large, crowded in a dense raceme. Nectariferous glands form a ring. Fruits oblong, attenuate below, apically clinging to a cylindric style. Stigma cushion-like, bilobed, valves very convex, hard, with a raised median nerve, and thick placentiferous margins.

S. KARRAIKENSIS (Speg.) Gilg & Muschler.

Syn. *Draba karraikensis* Speg. Description p. 445, no. 13.

In South Patagonia, central part of the territory of Sta. Cruz; by Rio Sta. Cruz on saline sandy clay; by Rio Leona (between Lago Argentino and Lago Viedma); and on saline sandy clay in the low mountains. A very variable species, divided by Spegazzini into three varieties, which, according to Gilg and Muschler, are rather to be considered as only forms, *magna*, *media*, *minima;* in fruit January. D.

Add Macl., p. 447:

ONURIS Phil.

Crucifers, near *Draba*, like a small form of *Hutchinsia;* but the septum is as in *Draba.* The opening of the strong-nerved valves and the short, not-lobed style, separate it from *Draba.* Found in the mountains of S. Amer. Perennial herbs with thick, many-headed rhizome, and branches bearing many very dense heads of leaves, which are grass-like. Flowers white, in racemes, on a naked, scape-like peduncle; bracts linear, usually with the lower flowers. Nectariferous glands form a ring. Fruit ovate or narrower, attenuate to a style, stigma slightly 2-lobed; valves convex, hard, the septum hyaline, mostly entire, or at maturity often vanishing as in *Draba.* Seeds, 1 or 2, or rarely 4 or 5 in the cells, on a short funicle. Cotyledons usually accumbent.

1. O. REICHEI Gilg & Muschler.

Leaves linear, entire, acute, narrowing downwards and sessile, 15 mm. long. Stems scape-like, gray, hairy. Flowers forming a dense subglobose white mass, without bracts. Sepals obovate, rounded; margin hyaline; petals larger than sepals, 2 mm. long, sublanceolate, apically rounded. Ovary ovate, Chili (is it in Patagon.?).

2. O. HATCHERIANA Gilg et Muschler comb. nov.

Syn. *Draba hatcheriana* Gilg, described p. 444, no. 11, fig. *b*, Pl. XVIII.

Found at Coy Inlet, also by Rio Fósiles in the mountains at about 1,500 m.

3. O. OLIGOSPERMA (Speg.) Gilg et Muschler comb. nov.

Syn. *Draba oligosperma* Speg.; *Draba spegazziniana* Dusén (described p. 446).

Found also at Coy Inlet, Patagonia.

N. Patagon., Territory of Neuquen, Lago Nahuel-huapi; Mid-Patagon., by Rio Carren-leofú, Rio Corcovado, and near Lago Paz; S. Patag., in the mountains along Rio Fósiles (about 1,500 m.).

3. O. SPEGAZZINIANA Gilg et Muschler comb. nov.

Syn. *Draba graminifolia* Speg., described p. 444.

S. Patagonia, in the mountains at Karr-Aike by Lago Argentino; Rio Fósiles, in the mountains about 1,500 m.

P. 447: *Sophia cumingiana*, and nearly all the species included under the same genus in Macloskie's arrangement, are now placed under the genus *Descurainea* (Webb & Barth, 1836).

It is doubtful whether all these are independent species, or whether, as suggested by Spegazzini, some of them only represent different forms or varieties of a few species.

The new arrangement is here presented:

1. *D. canescens* (Nutt.) Prantl. sub *Sophia pinnata* (Walt.) Brit., described p. 449, no. 7, with the distribution.

2. *D. cumingiana* (Fisch. & Mey.) Prantl., instead of *Sophia cumingiana*, or *Sisymbrium cumingianum*, described p. 447, no. 1.

Chili; S. Patagon., Lago Argentino, fide Spegazzini.

3. *D. deserticola* (Speg.) instead of *Sophia deserticola* (Speg. sub *Sisymbrium* Gilg et Musch., described p. 448, no. 2.

Mid-Patagon., near Puerto Rawson; S. Patagon.; between S. Julian and Rio Deseado.

4. *D. glabrescens* (Speg.) Dus. instead of *Sophia glabrescens* Speg., described p. 448, no. 3, with the distribution.

5. *D. glandulifera* (Speg.) Gilg et Musch.; instead of *Sophia glandulifera* Speg., described p. 448, no. 4, with the distribution.

6. *D. glaucescens* (Phil.) Prantl., instead of *Sophia glaucescens* (Phil.), described p. 448, no. 5.

Chili, Cordillera of Santiago; Mid-Patagonia, Chubut.

7. *D. subscandens* (Speg.) Gilg et Musch., instead of *Sisymbrium subscandens* Speg., described p. 450. no. 9.

N. Patagonia, near Carmen de Patagones. Similarly *D. heterotricha* Speg., *tenuissima* Phil.

P. 449: *Sophia sagittata* (Hook. & Arn.) should be deleted, being identical with *Sisymbrium sagittatum* Hook. & Arn., and both synonyms of *Thlaspi magellanicum* Com., p. 429.

P. 451: *Alyssum maritimum* Linn., "Undoubtedly recently introduced and still undomesticated." P. 452. *Braya;* the species are transferred to genus *Eudema*, except *Braya pusilla* A. Gray, which must be deleted, as it does not occur in Patagonia. Macloskie's determination (p. 453, no. 5, concerned a specimen of *Onuris oligosperma* (Speg.) Gilg et Muschler.

P. 451: *Arabis magellanica* (Pers.), in p. 453 sub *Hesperis.*

The former of these seems to be the most convenient name (fide Skottsberg).

Add Macl., p. 451, Cruciferæ before *Braya:*

EUDEMA.

Gilg and Muschler hold that the true *Braya* does not occur in South America; but some new *Eudemas* are there, whose characters tend towards a new group, *Brayopsis*, like *Braya*, yet different.

Eudema is one of the S. American genera. It contains cæspitose herbs with small linear or spathulate leaves, subequal spreading sepals, and sessile ovary, filiform style and capitate stigma. Silicle ovate-oblong, obtuse, compressed parallel to the fenestrate dissepiment; the valves 5–12 seeded.

Gilg and Muschler refer to it, or to *Brayopsis*, or *Englerocharis*, or *Weberhauera*, most of the South American species formerly placed in *Braya*, *Sisymbrium* and *Draba*.

1. E. GLEBARIA (Speg.) Gilg & Muschler comb. nov.

Syn. *Braya glebaria* Speg., described p. 452, no. 1.

Mid-Patagonia, on basaltic rocks between Lago Musters and Choiquelauen.

2. E. HAUTHALII Gilg & Muschler.

Perennial herb, with long slender rhizome, covered by old leaves, many-headed. Branches squarrose, with rosulate leaves; distant from each other. Leaves lanceolate, apically rounded, basally subcuneate, 1 cm. long, 2–2.5 mm. broad, thick, glabrous, entire. Flowers white, solitary, between the leaves of the rosettes; pedicels 5 mm. Sepals obovate, rounded, saccate, at base glabrous; petals nearly twice as long, broad obovate, rounded, unguiculate. Ovary obovoid, glabrous, with short style.

S. Patagonia, Santa Cruz, by the lower Rio Gallegos.

3. E. LYCOPODIOIDES (Speg.) Gilg et Muschler comb. nov.

Syn. *Braya lycopodioides* Speg., described p. 452, no. 2.

S. Patagon., on rocks between San Julian and Rio Deseado; in mountain near Rio Chico. D.

4. E. MICROPHYLLA (Dus.) Gilg et Musch.

Syn. *Draba monantha microphylla* Gilg. Dusén, in Pfl. d. Magellansl. iii. 5, 177. (Macl., p. 446, no. 15.)

S. Patagonia, in upper Rio Gallegos.

5. E. MONANTHA Gilg et Musch. comb. nov.

Syn. *Draba monantha* Gilg, *Braya monantha* Speg., described p. 446, no. 15.

S. Patagon. by Rio Sta. Cruz.

6. E. PATAGONICA (Speg.) Gilg et Musch. comb. nov.

Syn. *Braya patagonica* Speg., described p. 453, no. 3.

S. Patagon., in dry and sandy tableland by Karr-Aike and Lago Argentino; Mid-Patagon., near Lago Buenos Aires.

EUDEMA PECTINATA (Speg.) Gilg et Muschl.

Syn. *Draba pectinata* Speg., described p. 453, no. 4.

S. Patagon., on rocks in Sierra de los Baguales near Ultima Esperanza.

7. E. PYCNOPHYLLOIDES (Speg.) Gilg et Musch.

Syn. *Braya pycnophylloides* Speg., described p. 453, no. 6.

S. Patagon., in the mountains by Orr-Aike near Lago Viedma.

Note by Dusén.—The species of *Braya* must all be transferred to *Eudema*, except *B. pusilla* A. Gray, which must be struck out, as not belonging to the flora of our district. Macloskie's determination (p. 453, no. 5) refers, actually, to *Onuris oligosperma* (Speg.) Gilg et Muschler. For the determination of the genera and their species, of *Onuris*, *Eudema*, and *Sarcodraba* we are indebted to Prof. Dr. E. Gilg.

Localities by Macloskie.

BRAYA Sternb. et Heppe.—Macl., p. 451.

All the species enumerated by Macloskie, excepting *B. pusilla* A. Gray belong to the genus *Eudema*. The specimen determined as *B. pusilla* is identical with *Onuris hatcheriana* Gilg et Muschler.

P. 453: Delete *Braya pusilla* A. Gray, as the plant is *Onuris* (*Draba*) *hatcheriana* Gilg & Muschler (described Macl., p. 444).

P. 453: *Hesperis magellanica* (Pers.) O. Ktze is to be deleted, as one of the numerous synonyms of *Sisymbrium magellanicum* (Pers.) Hook f. Macl., p. 431.

Fam. 48. CRASSULACEÆ.

P. 456:

CRASSULA MAGELLANICA (Willd.).

As far as I am aware, not in Index Kewensis. Perhaps a manuscript name, and probably identical with *Crassula moschata* Forst. In my opinion it should be deleted. D.

C. MINIMA (Hook. & Arn.).

Should also be deleted. *Tillæa minima* Miers is a manuscript name. *Tillæa minima* H. & A., in Bot. Misc., iii, p. 338, is not in Patagonia.

Fam. 49. SAXIFRAGACEÆ.—Macl., p. 457.

SAXIFRAGELLA Engl.

Apetalous, with 5 stamens and 2 jointed calyx leaves; capsule with two short, divaricate styles and few seeds. Small moss-like plants, with 2-toothed, linear-spathulate leaves and solitary erect flower.

S. BICUSPIDATA (Hook. fil.) Englm.
Syn. *Saxifraga bicuspidata* Hook. fil.

In Fuegia to Cape Horn, and Staten Id.

P. 458:

SAXIFRAGA L.

S. CÆSPITOSA L. var. BRACHYPHYLLA Wedd.—Macl., p. 450.

Identical with *S. cordillearum* Presl. var. *magellanica* Poir or a form of that variety.

S. CÆSPITOSA MAGELLANICA (Poir.) Wedd.—Macl., p. 459.

Should be replaced by *S. cordillearum* Presl. var. *magellanica* Poir.

S. CORDILLERARUM Presl.—Macl., p. 459.
Var. *magellanica* (Poir.).

In Cordilleras of S. Patagonia. D.

P. 460: *Donatia* is to be transferred to *Stylidiaceæ* or *Candolleaceæ*: fide J. Mildbraed. (See Fam. 111.)

HYDRANGEA L.

H. INTEGERRIMA (Hook. et Arn.)—Macl., p. 461,

Should be deleted, being identical with *H. scandens* Poepp.

H. SCANDENS Poepp.—Macl., p. 461.
Syn. *H. integerrima* (Hook. et Arn.)

S. Chili and W. Patagonia at least to Rio Aysen.

P. 461: To *H.* (*Hydrangea*) *scandens*, add author, Poepp.; p. 462, l. 10 from foot, add the species,

ESCALLONIA BRITTENIANA Rendle.

Shrub, lower branches glabrescent, sparsely glandulose, densely leaved. Leaves glabrous, obovate or elliptical, basicuneate, serrate. Racemes leafy, often 5–7-flowered; terminal on branches; pedicels short; calyx-tube ribless, limbs triangular, acute; petals erect, 3 times longer than calyx, linear-spathulate, limb recurved. Disk cupuliform, crenate. Style entire; fruit glabrous; stigma capitate, 2-lobed.

Slopes of Mt. Buenos Aires.

P. 464:

E. VIRGATA Pers. (E. STRICTA Rem.).

This is figured in Plate XV (inaccurately lettered, should be ESCALLONIA).

S. Patagonia, low slopes near Lago Buenos Aires.

E. CHONOTICA Phil.

Glabrous; leaves oblong, equally acuminate both ways, appressed-serrulate; veiny. Flowers in racemes from subterminal axils. Calyx-teeth very short, acuminate. Petals spathulate-linear. Style long.

W. Patagon., Chonos Archipelago; Rio Palena.

E. FONKI Ph.

Glabrous, leaves obovate, mostly obtuse, cuneate, scarcely veined, acutely incised-toothed, entire at base; floral leaves lanceolate. Flowers in axils at tips of branches, in a short 5–8-flowered raceme, with short pedicels. Calyx-teeth triangular lanceolate; petals linear-spathulate. Style long.

Patagon., near Lago Nahuel-huapi: S. Chili.

E. LITTORALIS Phil.—Macl., p. 462.

Probably not occurring in our district.

E. RAHMERI Phil.—Macl., p. 463.

Should perhaps be deleted; probably synonymous with *E. macrantha* Hook. et Arn.

E. ULIGINOSA Phil.—Macl., p. 464.

Should be deleted. The description given by Macloskie refers to *Cynoglossum religiosum* (Phil.) Ok.

E. VIRGATA Pers.—Macl., p. 464.

This species is figured in plate XV, but under a wrong name: *Berberis virgata* R. & P.

RIBES L.

R. CUCULLATUM Hook. et Arn.—Macl., p. 465.

Should be replaced by *Ribes cuneifolium* Ruiz et Pav.

Macloskie has based his statement of the occurrence of *R. cucullatum* in W. Patagonia on my determination of a *Ribes* brought home from that region. The specimens in question actually belong, as Dr. J. Britton, British Museum, has kindly shown me, to *Ribes cuneifolium*. D.

R. CUNEIFOLIUM Ruiz & Pavon. Wedge-leaved Gooseberry.

Unarmed. Leaves cuneiform, cut, trifid; petioles not half as long. Peduncles axillary, solitary, 2–3-flowered. Bracts 2 at base of each flower. Berry pale-red; shrub 1 m. high.

Very common in W. Patagonia, usually occurring near the forest line; for instance, by Lago Argentino, Lago Viedma, Lago San Martin, Rio Fósiles, at the height of about 800–900 m., by Lago Buenos Aires, etc.

R. EBRACTEOLATUM Spach.—Macl., p. 465.

Not in our district.

R. GLANDULOSUM Ruiz et Pav.—Macl., p. 465.

Also found by Scott Elliot at Punta Arenas. It may be added that the leaves are glandular-punctulate underneath; Pav.

P. 465:

R. LACARENSE Phil.

Also occurs in N. Patagonia, Territory of Neuquen.

Add Macl., p. 466, line 6:

R. PUNCTATUM Ruiz & Pav.

Leaves 3-lobed, serrate, punctate underneath; racemes pendulous, short, bracts oblong, ciliate, punctate; calyx yellowish. Petals yellow, very small. Berries red and punctate.

Chili; N. Patagonia, Territory of Neuquen.

RIBES PALENÆ Phil., Univ. Chil., Tom. 85, p. 496.

N. and N. W. Patagonia, Rio Corcovado, Rio Carren-leofú, Rio Palena. (Concerning species of this genus see papers published by Janczewsky.) D.

Fam. 51. ROSACEÆ.—Macl., p. 467.

P. 469: *Rubus geoides* Smith, including *Geum parviflorum* (*Sieversia*), p. 472, occurs in North Patagonia, Territory of Neuquen, and at Punta Arenas.

P. 470:

FRAGARIA CHILENSIS Ehrh.

Occurs also in N. Patagon., Territory of Neuquen.

POTENTILLA L.

P. ANSERINA L.—Macl., p. 470.

Also in S. Patagonia, near Lago Argentino, on humid places in the mountains.

GEUM L.

G. INVOLUCRATUM Juss.—Macl., p. 471.

Should be deleted, being synonymous with *G. parviflorum* Comm.

G. MAGELLANICUM Comm.—Macl., p. 471.

Is not identical with *G. urbanum* L.

G. URBANUM L.—Macl., p. 472.

Should be deleted; not in our district.

P. 475: *Tetraglochin alatum* Gill., should give way to the prior name *Tetraglochin strictum* Gill. It occurs in N. Patagon., Territory of Neuquen.

ACÆNA Vahl.

P. 476, foot of page. Add to the *Acæna* key the following:

*b*4. Leaflets 4–5 pairs villous underneath, oblong, subcuneate. Calyx with long hairs. Fruit with 2–3–(4) *glochidia*. *ovalifolia.*

P. 479:

A. INTEGERRIMA Gill.

Occurs also at Lago Nahuel-huapi.

P. 480:

A. LÆVIGATA Ait.

To be deleted as a synonym of *A. tenera* Alboff. (Macl., p. 484).

P. 481:

A. MULTIFIDA Hook. f.

Occurs also at Lago Nahuel-huapi, at the confluence of Rio Limay and Rio Neuquen.

P. 481:

A. NUDICAULIS.

Last word should be (not "cultivated" but) "corticated."

P. 483: Add after line 9:

A. PTEROCARPA Dus. n. sp.

Caulis erectus, in ima parte foliatus, in media et summa foliolis nonnullis valde distantibus præditus, c. 3.5 dm. altus et c. 2 mm. crassus, glaber, teres; folia basalia vaginantia, subimbricata, pilosa, vaginis amplis, subinflatis, brunneis, extus dense pilosis, c. 1.5 cm. longis etc. 5 mm. latis, petiolata, petiolis c. 1–2 cm. longis et c. 1.5 mm. crassis, laminis oblongo-ovatis vel plerumque breviuscule linearibus, c. 2–4 cm. longis et c. 1 cm. latis, impari-bipinnatis, pinnis 4–7 parvis, circumscriptione obovatis, pinnulis linearibus; foliola caulona c. 4, impari-pinnatifida, 5–10 mm. longa, internodis c. 5–7 cm. longis; flores in capitulis globosis terminalibus congesti . . . ceterum nonnulli, 1–3 in axillis foliolorum caulinium dispositi; fructus 3-alatus, alis latis, chartaceis, rigidis, et ad margines et ad utraque latera spinis parvis retrorsis densiuscule vestitus.

W. Patagonia, near Lago Buenos Aires. (Leg. J. Koslowsky.)

This species resembles as to its vegetative system *A. multifida* Hook. fil. and *A. pinnatifida* Ruiz et Pav., but differs from these in the globose terminate head of flowers rather distantly separated from the nearest few flowers in the axil of the uppermost cauline leaflet. From all hitherto known *Acænæ*, this species is separated by the winged seeds. By this characteristic our species deserves to be ranged as the type of a new section.

The fruits—it may be remarked—were not quite ripe.

During my stay in S. Patagonia, 1905, I found at several localities in the steppe between Sta. Cruz (Emporium) and Lago Argentino an *Acæna* with ripe fruits, the plant being unknown to me. The seeds were winged, as in *A. pterocarpa*, but the wings were not so pointed, but more truncated than in the above species; they were armed with small retropacted spines as in *A. pterocarpa.*

The seeds brought home were sowed and germinated, but the plants were, when I started for S. Brazil, far from being in bloom. I may, therefore, not be able to state that the family plant found in the steppe of S. Patagonia is, as I am supposing, identical with the species here described.

ACÆNA ANDINA Phil.—Macl., p. 478.

Not in our district.

Add *A. adscendens* Vahl; stamens 4 (fide Skottsberg). Syn. *A. magellanica* (fide Bitter).

A. ARGENTEA Ruiz et Pav.—Macl., p. 478.

N. Patagonia, Lago Nahuel-huapi.

A. CADILLA Hook. fil.—Macl., p. 478.

Should be deleted; not known from our district

A. CÆSPITOSA Gill.—Macl., p. 478.

Also in S. Patagonia, near Lago Argentino on dry pampa in dense masses.

A. cuneata is only a syn. of *A. sericea* (fide Skottsb. and Bitter.).

A. FUEGIANA Phil.—Macl., p. 479.

Should be deleted, being identical with *A. cuneata* Hook. et Arn., sc. with *A. sericea.*

A. INTEGERRIMA Gill.—Macl., p. 479.

Also in E. Fuegia. My statement of the occurrence of *A. splendens* Hook. et Arn. in E. Fuegia refers to *A. integerrima.* D.

A. KRAUSEI Phil.—Macl., p. 479.

Should be struck out, being identical with *A. tenera* Alboff.

A. MACROSTEMON Hook. fil.—Macl., p. 480.

According to Philippi Cat. Plant. Chil. identical with *A. adscendens* Vahl.
A. pinnatifida Ruiz et Pav. *vice* ———

A. MULTIFIDA Hook. fil.—Macl., p. 481.

Includes *A. trifida* (fide Skottsb. & Bitter). Approaching subspecies *multiglomerulans* Bitt. (fide Bitter).

Patagonia in all its length, in the steppe near the forest.

A. MYRIOPHYLLA Lindl.—Macl., p. 481.

According to Philippi Cat. Plant. Chil. synonymous with *A. pinnatifida* Ruiz et Pav.

A. NUDICAULIS Alboff.—Macl., p. 481.

Should be deleted, being identical with *A. adscendens* Vahl.

A. OVALIFOLIA R. & P.—Macl., p. 481.

Is nearly as *A. adscendens;* but has gynæcium dissimilar; stamens with smaller anthers, only half a mm. in breadth. Occurs at Navarino I. (Skottsb.). Also in W. Patagonia, but not outside the beach forest. (Dusén).

Var. *chamanthera* Bitter is *A. ovalifolia,* but with exceedingly small anthers (fide Skottsberg).

A. PARVIFOLIA Phil.—Macl., p. 481.

Should be struck out as an independent species. It represents only a small-leaved form or variety of *A. lucida* Vahl.

A. PHILIPPII Dus.—Macl., p. 482.

Should be deleted, being identical with *A. cuneata* Hook. et Arn.

Add *A. pinnatifida* R. & P. (Vide Skottsberg & Bitter; found by Scott Elliot at Temuco, Chili; also subsp. *tomentillicupola* Bitt.)

A. PŒPPIGIANA Gay.—Macl., p. 483.

Macloskie's statement of its occurrence in S. Patagonia is certainly wrong. The specimen thus named belongs to *A. sericascens* Bitt.

Add *A. sericascens* var. *sexjuga accedens* (fide Bitter).

ACÆNA PULVINATA Ok.—Macl., p. 493.

Should probably be deleted; seems to be identical with *A. cæspitosa* Gill.

A. SPLENDENS Hook. et Arn.—Macl., p. 484.

Its occurrence in Fuegia and S. Patagonia is very doubtful. My own statement of its occurring in E. Fuegia refers to *A. integerrima* Gill.

Also a form of *Acæna* with narrow leaflets and more acute teeth; probably *A. subglabrescens* Bitt., at Punta Arenas. D.

A. TENERA Alboff.

Professor Skottsberg adds the following characters: Flowers over 3 mm. long; receptacle covered with peculiar, pearl-beaded, yellow hairs. Perigonial leaves broad-oval, to nearly circular, fleshy, red. Filaments 1½ mm. long, extending above the stigma, whose disk is dark-red, and broader than long. Fruit including the 4 spines measuring 4 mm. (The spines are sometimes fewer, never more than 4.) Found also in South Georgia.

A. TRIFIDA Ruiz et Pav.—Macl., p. 484.

This species is certainly not found in S. Patagonia. It is, however, difficult to say to which species Macloskie's statement refers. (See *A. pinnatifida* R. & P., supra.) D. Or it may be *A. multifida* Hook. f. subsp. *quinquefida* Bitt.

Fam. 52. LEGUMINOSÆ.—Macl., p. 485.

MIMOSA L.

M. ROCÆ Ler. et Nied.—Macl., p. 488.

Should be deleted; not in our district.

M. STRIATA (Benth.) Speg.—Syn. *Prosopis striata* Benth.

Eastern section of Patagonia at least to Rio Deseado.

PROSOPIS L.

P. CAMPESTRIS Gris.—Macl., p. 489.

As far as I am aware, not found in our district. D.

Add Macl., p. 490:

P. NIGRA Hieron. Bot. Acad. Nac. Cordova, iv (1831), p. 283.

P. DENUDANS Benth.—Macl., p. 490.

The northern section of the east coast of Patagonia.

P. SILIQUASTRUM DC.—Macl., p. 490.

This name should be replaced by

P. JULIFLORA DC.

Stipular spines straight, pinnæ paired, leaflets 18–20 pairs, linear to subovate, with petioles glabrous, interpinnular glandules sessile, spikes cylindrical, sessile, legumes very compressed, their interseminal isthmuses fleshy. Flowers yellow.

The northern section of the east coast of Patagonia; along Rio Negro and lower Rio Limay. Also in Jamaica.

P. STRIATA Benth.—Macl., p. 490.

Should be deleted, having been transferred to the genus *Mimosa.*

CASSIA L.

C. GLAUCA Lam.—Macl., p. 492.

Should be deleted; not in our district.

C. arnottiana Gill. & Hook., occurs also in the Territory of Neuquen.

ZUCCAGNIA Cav.

Z. PUNCTATA Cav.—Macl., p. 494.

Not known from our district.

CÆSALPINIA L.

C. GLAUCA (Ok.) Ok.—Macl., p. 494.

Should be eliminated, being identical with *Hoffmanseggia falcaria* Can.—Macl., p. 493.

C. præcox R. & P., occurs along the Rio Colorado.

SOPHORA L.

S. TETRAPTERA J. Mill.—Macl., p. 495.

N. W. Patagonia; W. Patagonia, at least to Rio Aysen; Chonos archipelago; S. Chili.

Macl., p. 493:

HOFFMANSEGGIA FALCARIA Cav. (instead of Gay).

North Patagonia, Territory of Neuquen.

ANARTHROPHYLLUM Benth.

Stipules united at base with the sessile leaves, forming a stem-surrounding ring.

A. RIGIDUM (Gill.) Hieron.

Flowers yellow, solitary at apex of branches. Weak, laterally hairy shrubs, with simple or tripartite leaves, nearly pungent. Argentina. Found by Hatcher at Rio Sta. Cruz, Mid-Patagonia, in fruit Feb. (determination verified by Dusén).

A. MORENONIS Ok.—Macl., p. 497.

Should be deleted, being a form of *A. desideratum* Benth.

Add Macl., p. 498:

A. PRICHARDI Rendle.

Undershrub, 10–12 cm. high, with habit of *A. desideratum*, with persistent leafsheaths. Leaf-segments 6 mm. long; stipules shorter and broader; margins of segments rolled in on the hairy upper face. Distinguished from *A. desideratum* by the deeply cut anterior calyx; lip 3-toothed, hinder segments triangular, obtuse.

Top of Mt. Frias.

S. Patagonia, in the mountains by Lago Argentino.

A. TONINII Ok.—Macl., p. 498.

Should be transferred to *A. rigidum* (Gill.) Hieron., as a variety of that species.

Common in S. Patagonia, in transversal valleys by Rio Sta. Cruz and, especially, on fields of drifting sand near the eastern part of Lago Argentino. Here the bushes are very often 2 m. high or still higher.

A. ELEGANS Benth.

This species does not occur in our district, at least not in S. Patagonia. The specimens determined as *A. elegans*, really belong to *A. desideratum* Benth.

Add Macl., p. 499:

ULEX Linn. Furze, Whin.

U. EUROPÆUS Linn.

Shrub, 4 feet; with green striate branches covered by innumerable acute branching spines, each having at base a few minute lanceolate leaves. Flowers golden; legumes opening elastically. Adventitious from Europe; in Falkland Is.

Add Macl., p. 501:

TRIFOLIUM Tourn. Clover.

A. Flowers yellow. Leaflets sessile. Stipules linear.	*agrarium.*	Falklands.
A2. Flowers pink or white.		
b. Stipules ovate. Terminal. Leaflets stalked; heads subglobose, 10–12-flowered.	*dubium* Sibth.	Falklands.
b2. Stipules broad-lanceolate.		
c. Stems slender, creeping; flowers white.	*repens.*	Falklands.
c2. Stems ascending; flowers pinkish.	*hybridum.*	Falklands.

T. AGRARIUM Linn. Yellow Hop-clover.

Flowers yellow, at length reflexed. Heads 6–9 mm. long. Annual, 6–1 cm. high. Leaves glabrous or slightly pubescent; stipules sublinear, acuminate, adnate half way to petiole. Leaflets all sessile, obovate or oblong, denticulate, narrowed basewards. Falkland Is., introduced.

T. HYBRIDUM Linn. Swedish Clover of U. S.

Heads globose, long-peduncled, pinkish to whitish, the flowers reflexed when old. Petioles moderate; stipules ovate-lanceolate; leaflets all from the same point, short-stalked, obovate, emarginate, not obcordate, basicuneate, finely serrulate, 6–12 mm. long. Pedicels of flowers slender, 1–2 mm. long; calyx-teeth subulate. Falkland Is., introduced.

T. REPENS L. White Clover.—Macl., p. 502.

It is found also in the Falkland Is., introduced.

TRIFOLIUM MINUS Sm. (partim T. FILIFOLIUM Linn.).

Flowers in ovoid pedunculated heads; petals scarious, becoming yellow, at length reflexed. Leaflets obovate to obcordate, finely denticulate, the terminal petiolulate; stipules broad-ovate, as long as petioles; peduncles long and filiform. Flowers subumbellate, sessile; calyx-segments unequal, the 2 upper very short. Legumes 1–2-seeded; seeds oblong-ovate.

Europe, Falkland Is., introduced.

T. POLYMORPHUM Poir.

The statement of its occurrence in Magellan seems to me doubtful. D.

ASTRAGALUS L.

Add Macl., p. 503:

A. AMUNATEGUII (Phil.) Speg.

Syn. *Phaca amunateguii* Phil.—Anal. Un. Chil., p. 31.

S. Patagonia, near Sta. Cruz Emporium; Puerto San Julian; Central Patagonia, Lago Musters; along Rio Carren-leofú.

Macl., p. 504:

A. DUSENII (Dusén) Macl.

(Syn. *A. brevicaulis* Dus.).

As Macloskie has remarked, the name (*A. brevicaulis*) was already occupied when I described this plant. Its original name should therefore be replaced by *A. dusenii* Macl.

It occurs also in S. Patagonia, near Lago Argentino; W. Patagonia, upper Rio Aysen. D.

A. MOYANOI Speg.—Speg. Prim. Flor. Chile., p. 601 (Macl., p. 506).

Central Patagonia, along Rio Teka-choique.

P. 506: *A. patagonicus* Phil. is regarded by Prof. C. Skottsberg as included in *A. rengifoi* Phil. (p. 507). It occurs on the pampas by Coy Inlet, Patagonia.

Having only very incomplete material at my disposal, I am not in a position to give a true version of the species of the present genus. D.

TRAGACANTHA Tourn.

T. PROCUMBENS GLABRESCENS Ok.—Macl., p. 508.

Should be deleted, being identical with *A. domeykoanus* (Phil.) Reiche. (Macl., p. 505.)

P. 509:

GLYCYRRHIZA L.

G. ASTRAGALINA G. & H.

Occurs in N. Patagonia, in the Territory of Neuquen.

Macl., p. 511:

ADESMIA.

According to the rules of the Vienna Congress (1905) we must discard the generic name *Patagonium*, and retain the popular name *Adesmia.*

A. AMEGHINOI.

Is *Patagonium subterraneum* Ok. of p. 519.

A. ALATA Gay.

Has leaves hirsutely albescent, 8–9-jugous, with long petioles.

A. CARNOSA Dusén.

Is *A. salicornioides* Speg. of p. 519 (fide Dusèn).

A. CONCRESCENS A. Gray.

Vice *P. karraikense* Speg. of p. 515 by Rio Sta. Cruz.

P. 515, no. 15: The name is *A. lanata* Hook. f. (non Reiche).

P. 517:

A. LOTOIDES Hook. f. Reiche (p. 516, no. 19).

Includes *P. mucronatum* H. & A. of p. 517.

A. PARVIFOLIUM (Phil.) O. Ktze.

Is *A. lanata* var. *parvifolia* (fide Speg.).

Macl., p. 517, add *A. palæna* Phil.
N. W. Patagon., by Rio Palæna.

P. 518: *A. pendula* DC. an est *A. bicolor* DC.?

P. 519: *A. retusa* Griseb.

Occurs in W. Patag., in upper valley of Rio Aysen.

ADESMIA SALICORNIOIDES (Speg.).

Was found by Dusén in S. Patagon. at Lago Argentino, about 1,000 m. above lea-level.

P. 521:

A. TRIJUGA Gill. (non Reiche).

Add var. *robusta* (Hook.). In N. Patagon., Territory of Neuquen.

Add p. 519:

A. SUFFOCATA Hook. f.

A high cordon in the open, near the margin of the valley of Rio Sta. Cruz.

P. 521:

A. VILLOSA Hook. f. var. SERICEA Rendle.

Vice *P. mucronatum*. (Dusén.)

A. VILLOSA Hook. f.

Vice *P. morenonis* (Harms.), at Killik-Aike, Rio Gallegos. (Skottsberg.)

VICIA Linn. Vetch.

P. 522:

V. BIJUGA Gill.

S. Patagonia, chiefly in the mountain region, for instance up to 1,000 m. in the upper valley of Rio Gallegos, by Lago Argentino and by Lago Buenos Aires.

P. 522, foot, add:

V. CRACCA Linn.

Perennial, with blue flowers, turning purple, crowded in long, 1-sided racemes; calyx-teeth unequal, shorter than the tube; flowers 12 mm. long, reflexed on short pedicels; leaflets 20–24, silky, narrow, acuminate. Seeds several.

Falkland Isles near Port Stanley. Undoubtedly introduced.

P. 523:

V. DARAPSKYANA Phil.

Occurs in Central and S. Chili; Patagonia, in the forests of deciduous beeches, for instance by Lago Argentino, Lago Viedma and Lago San Martin and in the upper valley of Rio Aysen; rare and sparingly flowering in the south section of the forest district.

P. 524:

V. MACRÆI Hook. et Arn.

By reason of its identity with *Vicia nigricans* Hook. et Arn., this species should be eliminated.

Macl., p. 524:

V. MORENONIS Harms.—Macl., p. 524.

This species is, according to Spegazzini, identical with *Vicia patagonica* Hook. fil. var. *depauperata* (Clos) Speg., described p. 525, no. 10.

P. 525:

V. NIGRICANS Hook. et Arn.

Syn. *Vicia macræi* Hook. et Arn.

Patagonia, in the district of deciduous beeches, viz., in its northernmost and middle section. The southernmost locality known to me is situated near Lago Buenos Aires. D.

P. 525:

V. PATAGONICA Hook. fil.

Magellan and Fuegia; not rare in S. Patagonia on humid meadows from the east coast to the outposts of the Cordillera. Head of Rio Chico, and Pampas near Coy Inlet.

LATHYRUS L.

P. 528:

L. MAGELLANICUS Lam.

Not only by Lago Nahuel-huapi but also through all Patagonia, especially in its western parts near the forest district. (Also in S. Brazil.)

Add Macl., p. 528, at foot of page the variety:

LATHYRUS MAGELLANICUS Lam. var. CAMPESTRIS Dus. nov. var.

Plate III.

Humilis, glaucescens, glaberrimus; folia patentia, foliolis breviusculis, lanceolatis, vel late-lanceolatis, mucronulatis, epetiolatis, membranaceis, stipulis semi-sagittatis; pedunculi elongati, 3–4-flori, floribus cyaneis, glabris, quam in typo submajoribus.

Caulis ad 5 cm. usque longus; petiolus c. 5 mm. longus; foliola 15–18 mm. longa et c. 5 mm. lata; pedunculi 6–7 cm. longi; flores fere 2 cm. longi.

S. Patagonia, on subhumid meadows near Rio Sta. Cruz, about 40 km. from its mouth.

This variety differs from the type in low growth, smaller leaves, greater flowers and comparatively long peduncles. It does not grow blackish in drying. It stands near to *L. magellanicus* Lam. var. *oxyphyllus* Speg., differing from that variety in much smaller and semisagittal stipules, shorter and patent leaflets and larger flowers.

P. 529:

L. MARITIMUS Big.

Occurs also on the Guaitecas Islands and on the opposite coast of the continent.

L. NERVOSUS Lam.

Not rare in the southern and middle section of the steppe, especially near the forest district, sometimes abundant. This species is known by me from the districts of Lago Argentino, Lago Viedma, Lago San Martin and Lago Buenos Aires. D.

L. PRATENSIS L.

Should be struck out; the determination refers to *V. patagonica* Hook. fil.

P. 530:

L. PUBESCENS Hook. et Arn.

According to Spegazzini this species is not rare through all Patagonia. There is, probably, some exaggeration in this statement. In the year 1905 I crossed S. Patagonia from the mouth of Rio Sta. Cruz to Lago Argentino and continued the explorations northwards to Lago San Martin without seeing a single specimen of this species. D.

Add Macl., p. 531, after Leguminosæ.

Fam. 52b. LARDIZABALACEÆ, THE AKEBIA FAMILY.

Twining or erect shrubs with diclinous, hypogynous, 3-merous flowers, and compound leaves. Males with 6 monadelphous stamens, having extrorse anthers; and 3 rudiments of carpels; females with 6 rudiments of stamens, 3 apocarpous carpels and few berries with copious endosperm.

BOQUILA (Dcne.).

Diœcious; males; calyx 6-leaved, its leaves membranaceous, the external ovate, the internal obovate. Petals 6, biseriate, the externals 3-nerved; stamens 6, acuminate; 3 rudiments of ovaries. Females: petals oblong lanceolate; 6 rudiments of stamens. Ovaries 3–6, with short styles. Adult ovaries as if 2-celled. Berries subglobose, few-seeded.

B. TRIFOLIOLATA (DC.) Dcne.

Undershrub, with trifoliolate leaves, and ovate leaflets. Bracts minute along the peduncles. Petals round-ovate, very small at the base of the staminal column.

Peru and Chili; N. W. Patagon., by Rio Puelo.

Fam. 53. GERANIACEÆ.

GERANIUM L.

P. 532:

G. ACAULE Willd.

Should be deleted, being identical with *Geranium sessiliflorum* Cav., which species occurs also in Chili and in Australia.

P. 534:

G. DISSECTUM L.

Macloskie ranges *G. patagonicum* Hook. fil. as a synonym and also as a variety of this species. In reality *G. patagonicum* is specifically distinct from *G. dissectum.* The last is stated by Spegazzini to occur in S. Patagonia, near the mouth of Rio Sta. Cruz — a somewhat indefinite statement.

GERANIUM MOLLE Linn.

Annual, with leaves nearly orbicular, and pedately cut half-way into about 9 segments. Peduncles 2-flowered, carpels transversely rugose, and seeds smooth.

Falkland Is.

Add Macl., p. 535, after (No. 11) *G. sessilifolium* the species:

G. PATAGONICUM Hook. fil.

(Characters as stated for it, as a variety of *G. dissectum*, p. 534): S. Patagonia, especially in its western parts near the forest line as well, for instance, as in the forests of deciduous beeches.

P. 536:

WENDTIA Meyen.

This appears to us to be the rightful name of this genus of *Geraniaceæ;* not being invalidated by the very closely similar name (*Wendia*) of a section of a genus of a different family, nor by subsequently elevating that section to be an independent genus. The difference of spelling (as well as of pronunciation) precludes confusion; and the generic name is not preoccupied by serving in a lower capacity, even if the name were identical.

P. 536:

W. PŒPPIGIANA Meyen.

Syn. *W. trigyna pœppigiana* (Klotsch) O. Ktze.

Erect. Calyx-leaves white-woolly inside; nearly naked outside. Sepals 5-merous, lobes small, not very hairy. Flowers rather small. Is distinguished from *W. gracilis* Meyen by its erect growth, 5-parted leaves and smaller flowers.

Fam. 54. OXALIDACEÆ.—Macl., p. 536.

OXALIS L.

P. 538, insert:

O. ARTICULATA Sav.—Savigny in Lamarck, Enc. Méth., IV, p. 686; DC. Prodr., I, p. 695.

According to Lorentz and Niederlein, Exp. Rio Negro, p. 201, in N. Patagonia, by Rio Negro.

P. 539, line 12, insert:

O. ENNEAPHYLLA Cav. var. PUMILA (d'Urv.) Hook. fil.; Hook. Flor. Ant., II, p. 253.

Syn. *O. pumila* d'Urv.—D'Urville Flor. Malouin, p. 616; *O. patagonica* Speg.—Speg. Plant. Pat. Austr., p. 501.

Falkland Ids.; S. Patagonia, in the steppe along Rio Gallegos and Rio Sta. Cruz, near Lago Argentino, in the Baguales district, in the mountains near Rio Fósiles at a height of about 1,000 m.

P. 540:

O. LAXA Hook. & Arn.

Syn. *O. alsinoides* Walp.; *O. micrantha* Bert.

The synonymy is scarcely correct. Dr. Reiche writes: "Ich glaube nicht, dass man die grossblütige *O. laxa* mit der kleinblütige *O. alsinoides*, etc., zusammenziehen kann."

P. 539:

O. GAYI Macl.

Should be deleted.

The plant described in Gay, Flor. Chil., I, p. 452, by Barnéoud under the name of *O. articulata*—not by Gay, as Macloskie says—is a Chilian and not a Patagonian one, as Macloskie seems to believe, and no notice should therefore be taken of that plant.

The plant Macloskie has in view was collected near Rio Negro by Lorentz and Niederlein, members of the Rio Negro Expedition under command of General Roca. In the botanical part of the reports of that expedition, p. 201, it is stated that the plant now in question very well agrees with the description of *O. articulata* Sav., or to cite the authors: "corresponde bastante bien con la diagnosis de la *O. articulata* Sav." D.

P. 539:

O. LACINIATA Cav.

S. Patagonia, in the steppe; much rarer than *O. enneaphylla* Cav.; also in the western section of Patagonia, viz., in the upper valley of Rio Aysen in the mountains.

The specimens collected by Hatcher at Cape Fairweather and at Coy

Inlet do not belong to the present species but, in reality, to *O. squamosa-radicosa* Steud. (p. 542, No. 14). The fig. 76, on p. 540, based on these specimens refers, consequently, to the latter species.

P. 540:

OXALIS LORICATA Dus.

S. Patagonia, along Rio Sta. Cruz, in the Baguales district above the forest line, by Lago Argentino, in the mountains above the forest line, along Rio Fósiles at an elevation of about 800 m., Central Patagonia, along Rio Chubut.

P. 541:

O. PATAGONICA Speg.

The specimen got by O. A. Peterson is referred by Dusén to *O. enneaphylla* Cav. It may be *O. enneaphylla* Cav., var. *pumila* (d'Urv.) Hook. f.

P. 542:

O. SQUAMOSA-RADICOSA Steud.

Includes as a synonym *Oxalis prichardi* Rendle.—Rendle Plant. Patag., p. 334.

Prof. Skottsberg thinks that both *O. squamosa-radicosa* and *O. prichardi* are synonyms of *O. laciniata* Comm.

Magellan; S. Patagonia, at Cape Fairweather and Coy Inlet, in the upper valley of Rio Gallegos, by Lago Argentino; Mid-Patagonia, near Lago Buenos Aires.

Fam. 55. TROPÆOLACEÆ.—Macl., p. 543.

TROPÆOLUM L.

P. 543:

T. PATAGONICUM Speg.

Also in S. Patagonia, viz., by Laguna Tar, in the upper valley of Arroyo Scheuen.

Macl., p. 543:

T. POLYPHYLLUM Cav.

Occurs also in N. W. Patagonia, at Rio Reñihue.

T. PENTAPHYLLUM Lam.

Is not known in the district, and may be omitted.

MAGALLANA Cav.

P. 544:

This genus is not named in the list of *Tropæolaceæ* in Engler & Prantl, die Naturl. Planzenfamilien, III, 4, though it was clearly described by Cavanilles. Recently, in Spegazzini's papers, Plant. nov. Amer. merid. Decad., I., p. 6, and Nov. Add. Flor. Pat., III, p. 256, detailed descriptions of this monotypic genus are furnished, whereby its generic rank, as distinct from the genus *Tropæolum* is further established. Nevertheless the Nachträge III, p. 181, of Engler & Prantl's work cites *Magallana* as synonymous with *Tropæolum*. I may also refer to E. Autran, les *Tropeolacees Argentines* et la genre *Magallana* (in Anales de la Sociedad Cientifica Argentina, Tom. LXIII, pp. 74–81). *Magallana porrifolia* Cav. (Description and distribution on p. 544.) D.

Fam. 56. ZYGOPHYLLACEÆ.

P. 545:

BULNESIA RETAMA Gris.

The occurrence of this species in our district is very doubtful. I do not know any statement referring to it for a Patagonian habitat. D.

P. 546:

LARREA NITIDA Cav.

Leaves unequally pinnate, leaflets 5–7 pairs, approximately linear, glabrous, glutinous. Flowers yellow. Ovary villous. Bonaria.

In N. Patagonia, Territory of Neuquen.

Fam. 57. POLYGALACEÆ.—Macl., p. 546.

POLYGALA L.

P. 547:

P. DARWINIANA Benn.

Syn. *P. techuelchum* Speg.

S. Patagonia; common and not seldom abundant, especially in the sublittoral district, both close to the rivers and also in the steppe, for instance at Rio Deseado, by Puerto San Julian, at Rio Sta. Cruz and Rio Gallegos; rather rare in the western parts of the steppe district.

For the determination of my specimens of this species collected in the summer of 1905 and determined by me as *P. tehuelchum* Speg., I am indebted to Professor Dr. R. Chodat, the monographer of the POLYGALACEÆ. D.

P. 548:

P. gnidioides Willd. occurs in N. Patagonia, Territory of Neuquen.

P. 549:

POLYGALA PATAGONICA Phil.

Should be deleted, being identical with *Polygala stenophylla* A. Gray, as Prof. R. Chodat kindly informed me. D.

P. 550:

P. STENOPHYLLA A. Gray.

Also in S. Patagonia, Rio Sta. Cruz, Rio Gallegos, Puerto San Julian.

P. STENOPHYLLA A. Gray var. OXYCARPA Chod. nov. var.

Fructa acuta, nec emarginata, appendicibus arilli multo brevioribus diversa. (R. Chodat.)

E. Patagonia, in sandy and bushy steppe near Puerto Madryn.

P. 550:

P. TEHUELCHUM Speg.

Should be deleted, being, as already stated, identical with *P. darwiniana* Benn.

P. THESIOIDES Willd. and P. VARIABILIS H.B.K.

Should be deleted, not belonging to the flora of our district.

MONNINA Ruiz et Pav.

P. 551:

M. ANGUSTIFOLIA De.

Argentina; E. Patagonia; Puerto Madryn, Puerto Cracker, Golfo de San Jorge, Rio Sta. Cruz.

Fam. 58. EUPHORBIACEÆ.—Macl., p. 551.

P. 554:

EUPHORBIA SERPENS Kunth.

According to Lorenz and Niederlein this species is found in the pampas, and its occurrence in North Patagonia, Territory of Neuquen, is now reported. Concerning *E. serpens* Kunth, var. *indica* Engelm., mentioned by Macloskie, see Engler & Prantl, die Natürl. Pflanzenfam., III, p. 105.

P. 554, 10 lines from foot, add:

E. DASYCLADA Dus. n. sp. (Plate I).

Suffrutex humilis, ramosissimus, perennis; rhizoma crassum, apice ramos numerosos breves, crassos, cortice fusco obtectos, denudatos, apice ramulosos emittens; ramuli breves, foliati; folia parva, opposita, glauca, symmetrica, carnosa, spathulata, lamina fere orbiculari vel plerumque rhomboidea, obtusa, breviter petiolata, estipulata, trinervata, utrinque dense, sed breviter pilosa; cyathium parvum, anguste campanulatum, terminale, solitarium, extus dense et breviter pilosum, lobis parvis, vix laciniatis, glandulis 5, transverse ovalibus, haud appendiculatis; flores ♀ perigonia notati, phyllis parvis, angustis, fere linearibus, longe persistentibus; capsula dense et breviter pilosa; semina griseo-viridia, obtuse trigona, lævissima vel subrugosa.

Suffrutex ad 5 cm. altus; rhizoma apicem versus c. 7 mm. crassum; rami c. 3, ramuli c. 2 cm. longi; petioli c. 5 mm. longi; lamina 4–6 mm. longa et lata; capsula c. 4 mm. alta et 5 mm. crassa; semina 2.5–3 mm. longa et c. 1.5 mm. crassa.

S. Patagonia, in the central part of Sta. Cruz Territory on the slope of the Rio Sta Cruz valley; found only once.

Low, densely branched undershrub about 5 cm. high; rhizome crass, upwards about 7 mm. thick, producing numerous denuded branches ending with several leafy branchlets; leaves small, opposite, glaucous, symmetrical, fleshy, spathulate, 4–6 mm. long and broad and with petioles of the same length, not stipulate, 3-nerved, densely and shortly hairy on both sides; cyathium small, thinly campanulate, terminal, solitary, densely and shortly hairy externally with small, scarcely laciniate lobes and 5 transversely oval, unappendiculate glands, perigon of the female flowers formed by three sublinear leaflets; capsule densely and shortly hairy.

The condensed growth of the plant gives it a rather peculiar appearance. I have not succeeded in explaining either the affinities of this species or the section of the genus in which it may be placed.

The specimens are somewhat defective, the cyathia being rather old and usually more or less fragmentary.

Fam. 59. CALLITRICHACEÆ.—Macl., p. 556.

CALLITRICHE ANTARCTICA Engelm.

Syn. *C. verna*, *L. longistamina* Engler.

Occurs also in South Georgia Is. Skottsberg is not sure of his identification, as he has not the fruit, but his specimen agrees with others found in Fuegia, Falkland Is., Marion I., Crozet, Kerguelen, Antigua, Auckland, Campbell I., and Maquarie I.

Fam. 60. EMPETRACEÆ.—Macl., p. 557.

EMPETRUM RUBRUM Vahl.

Occurs also in N. Patagonia, Territory of Neuquen.

Fam. 62. ANACARDIACEÆ.—Macl., p. 558.

P. 558:

SCHINUS L.

P. 559:

S. LATIFOLIUS (Gill.) Engl.

Should be deleted; not in Patagonia.

Add after line 12 from foot:

S. ANDINUS Engler.

Perhaps in Brazil; North Patagonia, Territory of Neuquen.

Fam. 63. CELASTRACEÆ.—Macl., p. 559.

MAYTENUS Feuill.

P. 560:

M. BOASIA Mol.

Occurs in N. Patagon., Valley of Neuquen.

M. (RHACOMA) DISTICHA (Hook. fil.) Urb.

Syn. *Rhacoma disticha* Hook. fil.

Compare Engler und Prantl, die nat. Pflanzenfam., Ergänzungsheft, II, p. 201.

Concerning the distribution of this species see Macloskie under *R. disticha*, p. 561. It occurs also at Punta Arenas (fide Skottsberg).

Fam. 64. RHAMNACEÆ.—Macl., p. 561.

P. 562:

Condalia, add *Condalia lineata* A. Gray (of which *Colletia lineata* A. Gray, p. 567, is a synonym). Distribution in N. Patagonia, Territory of Neuquen.

P. 563: Here the varieties of *Discaria* are to be regarded as valid: but (10) *D. serratifolia* var. *andina* Reiche, Flor. Chil., ii, p. 15, becomes *Notophæna andina* Miers.—Miers Contr., i, p. 271, plate 37 E. (3) *D. serratifolia* var. *cognata* (Miers) Reiche becomes *Notophæna cognata* Miers.—Miers Contr. Bot., i, p. 269, plate 37 C. (6) *D. serratifolia* var. *foliosa* (Miers) Reiche, becomes *Notophæna foliosa* Miers.—Miers Contr. Bot., p. 268, plate 37 B. *D. prostrata* (Miers) Reiche, becomes *Ochetophila prostrata* Miers.—Miers Contr. Bot., i, p. 282, plate 39 B. See below.

Also add: *Discaria trinervis* (Poepp.) Reiche. Syn. *Ochetophila trinervis* Poepp.; *Colletia doniana* Clos. infra, with characters, and distribution. Occurs also in Territory of Neuquen.

P. 566: *Colletia doniana* (to be of Gay, not Clos) is to be transferred as a synonym of *Discaria trinervis* (Poepp.) Syn. *Ochetophila trinervis* Poepp.

P. 567: *Colletia lineata* A. Gray is to be deleted, being *Condalia microphylla* Cav., p. 562, of which *C. lineata* (A. Gray) is a synonym.

P. 567: *Colletia spinosa* Lam. occurs in Mid-Patagonia, in upper valley of Rio Aysen, on the slopes of the mountains, at elevations of about 500–600 m.

Colletia spinosa var. *valdiviana* (Phil.) occurs in N. Patagon., Territory of Neuquen.

NOTOPHÆNA Miers.

No petals; anthers open longitudinally. Fruit tricoccous.

N. MAGELLANICA Miers.

Flowers 3 in the axils, 4-merous. Branches somewhat quadrangular. Magellan Strait.

OCHETOPHILA Endl.

This genus has both petals and petaloid calyx; and its petiole-bases meet from both sides so as to enclose the bifid stipules; anthers short, with hippocrepiform dehiscence.

O. PROSTRATA Miers.

Cæspitose alpine shrubs, with small, pendent, 4-merous flowers, and small, spathulate-oval leaves. Fruit 3-celled, 3-seeded. Branches spiny, and stipules prickly; calyx teeth reflexed. Magellan Strait, Coquimbo.

P. 567, insert, 7 lines from foot of page:

Fam. 64 *b*. VITACEÆ.—Grape-vine.

Tendril-climbing shrubs, with palmately divided or odd-pinnate leaves, and flowers with cohering, caducous petals at top. Fruit a berry having many seeds with ruminate endosperm.

CISSUS Linn.

A cup-like disk under the berry, which is rather dry and inedible; corolla expanding; tendrils few; seeds triangular obovate.

C. STRIATA Ruiz et Pav.

Leaves digitately 5-petiolate, glabrous, the leaflets sessile, oblong-lanceolate, serrate; stem striate, flexuose. Cymes crowded.

S. Amer.; N. W. Patagonia, Rio Puelo.

Fam. 65. ELÆOCARPACEÆ.—Macl., p. 567.

CRINODENDRON Mol.

P. 568:

C. PATAGUA Mol.

Is also in N. W. Patagonia, but not in Magellan.

P. 568: *Aristotelia maqui* L'Her. occurs also in N. Patag., Territory of Neuquen.

Fam. 66. MALVACEÆ.—Macl., p. 568.

The greater part of the Patagonian malvaceous plants being unknown to me, I am not in a position to put down more than a few remarks. D.

ABUTILON Gaertn.

P. 570, after line 1, add the species:

A. CRISPIFOLIUM (Cav.) Dus.

Syn. *Sida crispifolia* Cav.

Leaves cordate, incised-lobate, tomentose beneath, punctate-stellate above; the margin crispate. Pedicels solitary, exceeding the petioles. Calyx sinuate-undulate.

S. Patagonia, by Puerto Deseado.

P. 570:

A. VIDALI (Phil.) Speg.

The striking specific name given by Cavanilles has been restored by me on account of its priority. D. (Skottsberg includes it in *A. crispifolium.*)

This species is not rare in the middle and southern section of E. Patagonia but seems to be rare in the interior of the tableland, having been found here by me only twice, viz., in the central part of the Sta. Cruz Territory, and near Lago Argentino (Dusén); and in Cordilleras of South Patagonia (Skottsberg).

P. 571:

MALVA NICÆËNSIS All.

Is a synonym of *M. parviflora* L., fide T. Stuckert.

PLAGIANTHUS Forst.

P. 572:

P. PULCHELLUS (Bonpl.) A. Gray.

Should be omitted, not belonging to the flora of our district. D.

SIDA L.

P. 576, add after line 6:

(8) S. LINOIDES (Hieron.) Speg.

Syn. *Cristaria linoides* (Hieron.) Speg.

According to Spegazzini this plant is to be removed from the genus *Cristaria* to the genus *Sida*.

P. 574:

S. MACRODON Dl.

Is not strictly in our district, but in the territory of Rio Negro.

P. 577:

PAVONIA HASTATA Cav.

This species is known from S. Argentina, but does not belong to the flora of Patagonia.

Add Macl., p. 577:

Fam. 66*b*. LINACEÆ.

Herbs with regular hypogynous, 4–6-merous flowers, imbricated sepals, and convolute petals, the 5 stamens united at their base, and 8–10 seeded pod, having twice as many cells as styles.

Only genus is

LINUM.

L. MACRÆI Lindl. (non Hook.)

Syn. *L. chamissonis* Scheide.

Stems ascending from a woody base; leaves lanceolate with no basal glands, the lowest nearly opposite. Flowers oppositifoliose or terminal, yellow; styles free to base; stigma capitate. Capsules acutish, the valves dorsally flattened.

Chili, Patagonia (fide Skottsb.)

Fam. 68. HYPERICACEÆ.—Macl., p. 578.

HYPERICUM L.

P. 578:

H. CONNATUM Lam.

Should be eliminated; not known from Patagonia.

Fam. 69. FRANKENIACEÆ.—Macl., p. 579.

P. 579:

FRANKENIA MICROPHYLLA Cav.

Leaves oval, very small, quadrifariously imbricate, glabrous. Calyx glabrous. Prostrate herbs.

S. Amer.

F. PATAGONICA Speg.

This species is not rare on the east coast of Patagonia between 42° and 45° S. L.; found by me at Puerto San José, Puerto Madryn, Cabo Blanco and Puerto Mazaredo. D.

Fam. 70. VIOLACEÆ.—Macl., p. 580.

VIOLA L.

V. ARVENSIS L.

Falkland Is.; introduced.

P. 581:

V. COMMERSONII DC.

This occurs also in N. Patagonia, by Lago Nahuel-huapi, and in Neuquen Territory. The specimens collected by Hatcher in the Cordillera of S. Patagonia actually belong to *Viola maculata* Cav. or *V. microphylla* Poir.

Viola fimbriata; see Dusén's note on *V. microphylla* Poir., of Fl. Pat., p. 583.

V. CARNOSA Sm.

S. Patagonia, Rio Coy.

V. MACULATA Cav.

Leaves ovate, crenate, smooth, spotted beneath; stipules ovate. Petals very hairy inside, yellow. Stigma plane, with sharp rostrum. Stem very short.

Patagonia. Also in S. Chili; in W. Patagonia, sometimes with cleistogamic flowers.

P. 582:

V. MACULATA MEGAPHYLLA.

Quaere: "Neither author nor place nor where described is given." "Neither Reiche nor I myself know this plant." D.

VIOLA MAGELLANICA Reiche (non Forst.)

May be replaced by the name *V. reichei* Skottsb. nom. nov.
Punta Arenas.

P. 582:

V. HUIDOBRII Gay.

Should be deleted; not known from our district.

P. 583:

V. TRICOLOR Linn.

Falkland Is.; doubtless introduced. (Skottsb.)

P. 581:

V. FIMBRIATA Steud.

Perhaps the plant is *V. microphylla.*
Found at Punta Arenas.

V. MAGELLANICA Forst.

The locality, Coy Inlet, stated by Macloskie, actually refers to *V. maculata* Cav. *V. magellanica* does not belong to the steppe vegetation. This species is known also in N. W. Patagonia and probably occurs in the whole of W. Patagonia. D.

P. 583:

V. MICROPHYLLA Poir.

Syn. *Viola fimbriata* Steud.

The plant is rather variable as to its size, but less varying concerning the pilosity of the leaf margin. In my opinion *V. fimbriata* Steud. is not to be specifically separated, even as a variety, from *V. microphylla* Poir and should be placed as a synonym of the latter. D.

V. vulcanica G. & H. occurs also in N. Patag., Territory of Neuquen.

P. 584, add after line 4, the species No. 11.

V. ARVENSIS Murr.

Stem angular, decumbent, diffuse. Leaves ovate, oblong, toothed-crenate. Corolla scarcely exceeding the hairy calyx. Annual, with yellow flowers.

Europe: Patagonia.

Add line 4:

(12) V. COTYLEDON Ging.

Stigma bifid, with reflexed lobes. Leaves crowded, rhombo-spathulate, attenuate to a long petiole, entire, glabrous. Sepals linear; spur very short; capsule trigonal; seeds about 9, blackish. Peduncle twisted above.

Chili. Chubut, in the Andine district; Territory of Neuquen.

(13) V. LANCEOLATA Forst.

Stoloniferous, stigma marginate; leaves lanceolate, attenuate, stipules free. Sepals lanceolate; petals all glabrous (?). Stem prostrate; calyx glabrous.

S. Amer.; N. Patagon., Territory of Neuquen.

Fam. 71. FLACOURTIACEÆ.—Macl., p. 584.

AZARA LANCEOLATA Hook. f.

Occurs in N. Patagonia, Territory of Neuquen.

Add after line 7 from foot, the following species:

A. MICROPHYLLA Hook. f.

Branches distichous. Leaves glabrous, small, distichous, entire; the larger obovate, obtuse, attenuate, the smaller oblong-rounded. Corymb sessile or short-stalked; flowers small. Stamens 4–5 with alternate glands, filaments flat, anthers extrorse.

Valdivia, Chili; W. Patagonia, here sometimes with cleistogamic flowers.

Add:

Fam. 71 *b*. MALESHERBIACEÆ.

Herbs or undershrubs with alternate, ex-stipulate leaves, and 5-merous, rather showy flowers, having the 5 stamens hypogynous on a gynophore, and a 3-merous one-celled capsule enclosed in the persisting receptacle. Seeds many, with endosperm.

MALESHERBIA Ruiz & Pav.

Erect, tomentose, with narrow, serrulate or pinnatifid leaves, and bracted racemes. Calyx tube long, the petals like to or smaller than the calyx-lobes. Styles 3, arising separately on the ovary.

MALESHERBIA HUMILIS D. Don.

Very branching, villous, depressed.

Leaves linear, ovate or lanceolate, acute or obtuse, serrate, laciniate or lobulate, occasionally entire. Calyx dilated at the throat, tube narrow. Crown continuous, coarsely toothed; anthers nearly rotund.

N. Patagonia, Territory of Neuquen.

Fam. 73. LOASACEÆ.—Macl., p. 585.

LOASA Juss.

P. 586:

L. ARGENTINA Urb. et Gilg.

Also in N. Patagonia, Territory of Neuquen, and by Rio Sta. Cruz. Not rare in W. Patagonia, especially near the border of the forest district or, sometimes, in the forest of deciduous beeches.

The statements, in my earlier papers, of the occurrence of *Loasa volubilis* Juss. in the Baguales district and in the upper valley of Rio Aysen, are based on false determinations and, actually, refer to the present species. D.

P. 587, add:

L. ASTERIAS Dus. n. sp. (Plate I).

Euloasa, perennis, volubilis, ad sectionem Pinnatæ pertinens, ovario manifeste supero, ab speciebus omnibus hujus sectionis diversa. Radix fusiformis; caulis erectus, volubilis vel subvolubilis, fragilis, cortice in parte inferiore saltem laxe accumbente, in parte summa caulis densiuscule aculeata, aculeolis recurvatis, ceterum lævissimus, simplex vel parce ramosus, ramis erectis, apice florigeris; *folia* in caule florigero *pauca* vel fere nulla, valde remota, *ovata* vel *lanceolata*, mediocriter petiolata, *bipinnata* vel subtripinnata, apicem caulis versus decrescentia, suprema parva, pinnata, omnia (præsertim ad margines) pilis brevibus, basi inflatis remote vestita; flores solitarii vel bini, terminales, prophyllis parvis, linearibus, integris vel subpinnatis, oppositis; calyx fere planus in latere inferiore, præsertim in parte centrali, ad margines et ad lineam lobulorum medianam, pallidius coloratam spinis basi bullatis dense instructus, in postfloratione subaccrescens, profunde lobulatus, lobis subattenuatis, rotundate obtusus; petala in æstivatione imbricata, sub anthesin horizontalia, aurantiaca, cochleariformia, ungue valde canaliculate concavo, marginibus ubique crispatis et sublaceratis, utrinsecus dorso in area angusta mediana longitudinali et pilis brevissimis et ciliis strictis basi bullatis vestita; squama a dorso visa circumscriptione urceolata, saccate inflata, superne subangustior et trialata, alis raptim elevatis, apicem versus sensim decrescentibus, pilis circiter ad medium alarum egredientibus, apice laminulas gerentibus, apice profunde incisa, lobis marginibus incrassatis, incurvatis; staminodia 2 inferiora, squamam vix superantia, supra basin c. ¼ longitudinis geniculato-inflexa, extus ad geniculum appendiculata, appendicibus apice ciliatis, intus papillosa, supra medium dense papillosa, papillis retroversis, summo subulato-attenuata; ovarium superum, intra lobos calycis spinis longis, lævibus, basi bullatis, densissime vestitum, 3-valve, valvis cum placentis alternantibus; placentæ tres; ovula numerosissima, multiseriata, horizontalia; semina oblonga, obtusa, testa fusca, eleganter reticulata.

S. Patagonia, Puerto Camerones, on bushy hills.

(11) L. BERGI Hieron.

In Boll. Acad. Nac. Cordoba, iii (1879), 349.

N. Patagon., near Rio Negro (Stuckert).

P. 587:

L. FILICIFOLIA Poepp.

Should be deleted, not belonging to the flora of Patagonia. The statement of its occurrence at the head of Rio Chico (of Rio Sta. Cruz) refers to *Loasa argentina* Urb. et Gilg.

L. MULTIFIDA Gay.

Should be eliminated; not known from Patagonia.

L. MURALIS Gris.

Macloskie's statement of the occurrence of this species, or, more properly, of a variety of it, is based on the reports of the Rio Negro Expedition. Lorentz and Niederlein have, it is true, enumerated this species in the report of the botanical results of that expedition, but with hesitation. They emphasize the fact that the plant which they had in view belongs possibly to the gen. *Blumenbachia*, showing a certain affinity to *B. multifida* Hook. and *B. insignis* Schrad., and that its true place can not be determined without our having at our disposal more complete material. Under these circumstances I think it would be advisable to let this species disappear, at least for the present, from our list of the Patagonian flora. D.

Add Macl., p. 586:

Loasa petrophila Urb. et Gilg.—J. Urban, Monographie Loasar. in Nov. Akad. Abh. Kais. Leop. Carol. Akad. Halle, 76, n. l. p. 169.

N. Patagonia, Territory of Neuquen.

P. 588:

L. spegazzinii Macl.

Should be removed to the genus *Cajophora*, being only a synonym of *C. patagonica* (Speg.) Urb. et Gilg (described in p. 590).

P. 588:

L. volubilis Juss.

Not in S. and W. Patagonia; see above under *L. argentina;* according to Reiche it occurs in N. W. Patagonia, Rio Reñihue.

P. 589:

SCYPHANTHUS.

S. elegans D. Don.

Also in S. Patagonia, at Lago Argentino (according to A. B. Rendle).

CAJOPHORA Presl.

P. 590:

C. patagonica (Speg.) Urb. et Gilg.—

Syn. *Loasa spegazzinii* Macl., *Loasa patagonica* Speg.

S. Patagonia, Rio Chico and Rio Sta. Cruz; E. Patagonia, Puerto Camarones, Golfo de San Jorge.

P. 590, add *C. sylvestris* (Poepp.), of which *C. scandens orientalis* U. et G. is a synonym, as is also *Blumenbachia sylvestris* Poepp.

P. 590, foot of page, add:

Blumenbachia insignis Schrad.

Described in Flor. Pat., p. 587, sub nomine *Loasa muralis* Gris., which is a synonym.

Fam. 74. CACTACEÆ.—Macl., p. 591.

CEREUS Haw.

P. 592:

C. DUSENI Web.

Occurs in N. Patag., Territory of Neuquen.

C. PATAGONICUS Web. (non *patagonica*).

E. Patagonia, Puerto Madryn, Golfo de San Jorge, Sta. Cruz; probably rare in the interior; found in the central part of the Sta. Cruz Territory, at Rio Leona and at Laguna Tar in the upper valley of Arroyo Scheuen.

ECHINOPSIS Zucc.

P. 593, line 2, insert:

E. MELANOPOTAMICA Speg.

N. Patagonia, Rio Negro, Rio Neuquen.

ECHINOCACTUS Lk. et Otto.

P. 593:

E. ACUATUS Lk. et Otto var. TETRACANTHUS Lehm.

This name should replace *E. acuatus* Lk. et Otto, the variety, but not the species, being known from Patagonia.

E. GIBBOSUS CHUBUTENSIS Speg.

Is identical with *E. melanopotamica* Speg., occurring in Neuquen, and by Rio Sta. Cruz.

OPUNTIA Haw.

P. 595, add after line 7, the following species:

(6) O. AUSTRALIS Web.

S. and Mid-Patagonia, Rio Sta. Cruz, Rio Chubut.

(7) O. DUSENII Web.

Patagonia, Chubut Territory.

P. 595, after line 7, add:

OPUNTIA GRATA Phil.

Joints ovate, 36 mm. long, 26 mm. thick; hairs white, clothing areoles 8–10 mm. long; spines 3–4, equal, flat, fulvous, 20 mm. distant. Flowers all yellow, 25 mm. long; spines setiform, 12–18 mm. long, covering the upper tubercles of the ovary. Scale ovate, leafy, 3 mm. long. Calyx-leaves ovate, obtuse, 6 mm. long. Stigmas erect, 6 mm. long.

MAIHUENIA Phil.

Maihuenia has habit of *Opuntia*, but no glochidia; leaves cylindrical or sagittate, with short petioles; flowers terminal, rotate. A low alpine, dwarf shrub, jointed, the joints short-cylindric. Leaves fugacious.

Has 3 species in Chili, viz.,

1. *M. valentini* Speg. Joints cylindrical; very spiny.
2. *M. brachyadelphus* K. Sch. Joints spiny only above, or sparingly.
3. *M. philippii* (K. Sch.) Web. Joints globular.

P. 595:

M. POEPPIGII Speg. (non Web.)

(Sub *M. poeppigii* Web.)

Should be deleted, being identical with *Maihuenia valentini* Speg.

Fam. 75. THYMELEACEÆ.—Macl., p. 597.

DAPHNE L.

D. PILLO-PILLO Gay.

Should be removed to the genus *Ovidia*, Macl., p. 598.

P. 598:

D. TENERA Phil.

Should be deleted, being identical with *O. pillo-pillo* (Gay) Meissn.

P. 598, add (l. 14 from below) the species:

OVIDIA PILLO-PILLO (Gay) Meissn.

Syn. *Daphne pillo-pillo* Gay; *Daphne tenera* Phil., described above.

S. Chili; northern section of W. Patagonia.

Macloskie incorrectly states (p. 962) that this species is placed in Engler und Prantl, die Nat. Pflanzenfam. in the genus *Daphne*. The species, actually, is noted in that work as belonging to *Ovidia*.

Fam. 77. MYRTACEÆ.—Macl., p. 601.

P. 602:

UGNI MOLINAE Turcz.

This name must remain, as *Ugni ugni* (Turcz.) violates rule 55 of botanical nomenclature.

P. 603, add after line 6 the species:

MYRTEOLA BULLATA Berg.

The genus *Myrteola* has 4-cleft perianth and is oligandrous.

M. bullata puberulous; leaves at length glabrate, round-ovate to oblong, obtuse, obsoletely 5 or more nerved; bullate epidermis. Peduncles axillary, solitary, 1-flowered, shorter than leaves. Sepals oblong-lanceolate, acute, ciliolate. Stamens 12. Shrub, 6 m. high. Chili.

P. 603:

MYRTUS LUMA Barn.

Is also found in S. Chili and W. Patagonia.

P. 604, add 5 lines from foot, the species:

EUGENIA CUSPIDATA Phil.

Young branches tomentose, reddish. Leaves petiolate, oblong-ovate, cuspidate or mucronate, 2.5 cm. long. Peduncles as long, solitary, 1-flowered, or 2–3-flowered. Sepals ovate, oblong. Petals large. Ovary hairy. Fruit apocarpous.

N. W. Patagonia, Rio Palena.

P. 605, add foot of page:

MYRCEUGENIA Berg.

Seeds numerous; otherwise as *Myrtus* (which has only 2 seeds).

1. M. PLANIPES Berg.

Syn. *Eugenia planipes* Hook.

Branches compressed, having the young leaves, branches and peduncles silky. Leaves petioled, rigid, oblong-elliptic, narrowing both ways;

acuminate, with pellucid dots; glabrous when adult, greenish white underneath. Peduncles 1–3, strong, compressed, each 1-flowered, shorter than leaves. Sepals triangular-concave, ciliolate. Ovary 3-celled.

S. Chili; N. W. Patagonia, by Rio Palena.

2. M. APICULATA (DC.) of which *Eugenia apiculata* DC. is a synonym.

For description and distribution see Macl., p. 604, No. 1.

MYRCIA DC.

Trees or shrubs, with opposite pinnately veined leaves and mostly small, axillary or subterminal flowers, in cymes or panicles. Calyx turbinate or hemispherical, 5-merous; petals 5, spreading. Stamens numerous, with free filiform filaments, and dorsifixed 4-celled parallel anthers. Ovary 2–3-celled, or more, with 2 ovules side-by-side in each cell. Seeds 1–2, with rather long, incurved radicle.

Through all S. Amer. extending to Patagonia.

M. CHILENSIS Berg.

A tall tree with opposite, petiolate, coriaceous, oblong, or oval-oblong leaves; which are long-acuminate, and basally acute, punctate when young. Panicles strong, axillary and subterminal, longer than the leaves, many-flowered. Sepals short, obtuse, ciliolate. Petals white(?). Branchlets and panicles compressed; and nigrescent; young leaves, etc., puberulous.

Chili, Patagonia.

M. LECHLERIANA Miquel.

Branches glabrous; branchlets and petioles densely appressed, hirtulous, as both sides of leaves. Leaves not glandular-punctate, elliptical, 25 mm. long, acute both ends, pale underneath. Flowers axillary and terminal, racemed-corymbose. Calyx turbinate, finely 2-bracteolate at base; petals suborbicular, finely ciliolate; 5th calyx-lobe smaller. Style flexuose, curved. Ovary 2-celled.

By Valdivia in S. Chili; Patagonia.

M. SERICEA Berg.

Low trees having branchlets and young leaves silky with white hairs; leaves opposite, petiolate, ovate or ovate-oblong, gradually attenuate, with long linear tip, ciliate, when young pellucid-punctate, adult glabrous, except at the nerves, and silky beneath. Panicles axillary and subterminal. Ovary 2-celled. Sepals rounded, obtuse.

Chili, Peru, and Brazil; Patagonia.

Fam. 78. ONAGRACEÆ.—Macl., p. 606.

P. 608:

EPILOBIUM AUSTRALE P. & H.

Occurs in Neuquen, N. Patagonia.

P. 609, after line 8, insert:

13. E. GLANDULOSUM Lehm.

Like *E. adenocaulon* Hannsk., but differing by having inflorescence and capsules glandular-pubescent. Leaves lanceolate, or lance-ovate, mostly obtusish, sparingly serrulate, seldom over 6 cm. long. Young flowers mostly nodding. Seeds obovoid, abruptly beaked, 1 mm.; coma white.

N. Amer.; Cordilleras of Central Chili; N. W. Patagonia, by Rio Palena.

E. GLAUCUM Ph. & Hauss.

Add var. STENOPHYLLUM Hausskn.

N. Patagon., Territory of Neuquen.

Add Macl., p. 609:

E. LECHLERI Ph. & Hauss., var. ANTARCTICUM Hausskn.

Monograph, p. 270 (as Macl., p. 611).

Syn. *E. tetragonum* var. *antarcticum* Hook.

P. 610. Delete *Epilobium tetragonum* L., as not known from Patagonia. The var. *antarcticum* belongs to *E. lechleri.* Nor is *E. nivale* Meyen known in Patagonia; it belongs to Central Chili. D.

P. 611. Add to *Epilobium* the species:

12. E. CONJUNGENS Skottsb.

Alpine cæspitose creeping herbs, 10–15 cm. long, partly glabrous, partly whitish-hairy. Leaves rather small, opposite, nearly sessile and amplexicaul, entire with revolute margins, suborbicular, with prominent midrib beneath. Flowers few, solitary in the axils, pedicels 1–2 cm. Calyx-leaves obtuse, glabrous; petals a little longer, pale pink. Stigma capitose. Capsules glabrous, purplish.

S. Fuegia, Ushuaia, in the alpine region, 810 m., W. Magellan, Desolation Id., at Puerto Angosto, in the subalpine region, about 400 m. This interesting species stands nearest to *E. nummulariæfolium* A. Cunn., and *E. pedunculare* E. Cunn., both of New Zealand.

P. 610, middle of page, add the species:

14. EPILOBIUM PATAGONICUM Rendle.

Glabrous, glaucescent (flower-bearing part only is sent). Stem erect, woody, branching; internodes marked by lines. Leaves alternate or subopposite, approximate, or ternately crowded, sessile, narrow-lanceolate, acute, basally narrowed; mid-nerve prominent, with purplish denticles. Buds ellipsoid, purplish. Flowers corymbose, sepals lanceolate purplish; petals one third longer, rose-purplish, obcordate. Stigma broad-oblong; capsule elongated, purpurascent; seeds papillose, ellipsoid, narrow baseward, subtruncate apically. Stem hollow, narrowing upwards.

Slopes at Punta Bandera, Patagonia.

15. E. STA. CRUZENSE Dus.—(Dusén, *Neue u. seltene Gefässpfl. der Magellansl.*, p. 28.)

S. Patagon., near Lago Argentino in the upper valley of Rio Sta. Cruz.

ŒNOTHERA Spach.

P. 611:

My knowledge of the Patagonian species of *Œnothera* is very imperfect and, therefore, I will only venture on a few remarks. A careful examination of these would, doubtless, result in a reduction of their number. D.

P. 613:

O. MOLLISSIMA L.

Syn. *Œnothera odorata* Jacq.

According to Reiche, Flor. Chil., these species are identical.

P. 614:

O. STRICTA Ledeb.

Is found also in Central and S. Chili.

P. 614:

O. TENELLA Cav.

Should be eliminated, being identical with *Godetia acuella* (Cav.) Spach.

P. 611:

FUCHSIA L.

P. 615:

F. MAGELLANICA Lam.

Syn. *Fuchsia coccinea* Ait.—*Fuchsia macrostemma* Ruiz et Pav.

P. 624:

BOWLESIA TROPÆOLIFOLIA Gill.

Chili, Juncal 2220 m. Struggling among other plants. (Determined by Skottsberg.)

As already stated in my exposition of the Fuegian and Magellian flora: Die Gefässpfl. der Magellansländer, p. 149, I am not able to distinguish *Fuchsia coccinea* Ait. from *F. magellanica* Lam. Also *F. macrostemma* Ruiz et Pav. is identical with the last mentioned. D.

This species occurs also, but sparingly, on the eastern slope of the Cordilleras.

Fam. 79. HALORRHAGIDACEÆ.—Macl., p. 615.

Algal nests are found in the stem of *Gunnera*. This family is Antarctic: *Halorrhagis* is nearly confined to Australia, Tasmania, and New Zealand. *H. erecta* is found in San Juan Fernandez and Chili, being used in Chili, as in New Zealand, as a food plant. Forms in the Northern Hemisphere are all nearly allied to southern species.

MYRIOPHYLLUM L.

P. 616:

M. ELATINOIDES Gaud.

Also in Chili.

M. PROSERPINACOIDES Gill.

Is identical with *M. brasiliense* Camb., fide Schindler in Pflanzenreich, Heft 23, p. 88. Hence replace the name by *Myriophyllum brasiliense* Camb., found in Brazil, Chili; perhaps in North Patagonia. D.

MYRIOPHYLLUM SPICATUM L.

Should be omitted; Macloskie's statement of its occurrence in the valley of Rio Sta. Cruz refers to *M. elatinoides* Gaud. (described Macl., p. 616).

P. 617:

GUNNERA MAGELLANICA L.

The length of the inflorescence and the petals vary much; sometimes the inflorescence is sessile, at other times on a 2 cm. peduncle; flowers all female at Gulf of St. John; in Dawson I. the peduncles were 10 cm. and flowers mostly males. (E. D. W.) At Punta Arenas it covers the soil and prevents the growth of grass. (Skottsb.)

Fam. 81. UMBELLIFERÆ.—Macl., p. 619.

Add Macl., p. 623, at line 7 from foot:

8. HYDROCOTYLE CHAMÆMORUS Cham. & Schl.

Leaves reniform, 7-lobed, bicrenate, glabrous; petioles retro-hispid. Umbels of 20–30 flowers, in heads. Fruits resinous, punctate; mericarps 3-jugous, the jugæ smooth, with convex valleculæ.

Chili; N. W. Patagon., by Rio Palena.

Add Macl., p. 624:

HUANACA Cav.

Of Mulineæ. Fruit with very narrow commissure, dorsally compressed, 2-scutate; carpels dorsally plane or concave, attenuate toward margins, not winged. Calyx-teeth prominent. The form of the carpels of the tribe is characteristic. They are herbs, with leaves mostly radical, undivided or palmatisect. Stipules scarious. Umbels simple or irregular. Stylopodium conical.

P. 625:

H. ACAULIS Cav.

Syn. *Azorella acaulis* (Cav.) Drd.

The characters and distribution of this species were given in Macl., p. 626, no. 1 (sub *Azorella acaulis.*)

AZORELLA Lam.

P. 626:

A. ACAULIS Cav.

Should be deleted, being only a synonym of *Huanaca acaulis* Cav.

P. 627:

A. BOLACINA Clos.

Is to be omitted; not known from our district.

A. BOVEI Speg.

Should be removed to the genus *Bolax*. *Azorella cavanillesii* DC. (better *Huanaca cavanillesii* DC.) vice *A. acaulis* (Cav.) near Coy Inlet.

P. 628:

A. GLEBARIA (Comm.) A. Gray.

Should be removed to the genus *Bolax*.

P. 629:

A. HOOKERIANA Clos.

Should be eliminated, being identical with *Azorella cæspitosa* Cav. (Macl., plate xxii, A).

A. HYDROCOTYLIFOLIA (Field et Gardn.) Macl.

Should be removed to the genus *Pozoa* (infra p. 246).

A. LYCOPODIOIDES.

The specimens belong to *A. filamentosa* Lam. (Macl., p. 628). Patagon., and Coy Inlet.

A. RANUNCULUS d'Urv.—var. TRIFOLIATA Dus.

Syn. *A. trifoliata* Dus.—Dusén, Neue und seltene Gefässpfl., p. 31. T. 6, F. 1–2 and T. 7, F. 35–38.

Since the description of *A. trifoliata* Dus. was published, I have had opportunity to compare the type specimen with specimens of *A. ranunculus.* As a result, I came to the opinion that the plant is more properly to be placed as a variety of *A. ranunculus* than as a distinct species.

The variety is larger and more robust than the type and differs also from it by having firmer and somewhat fleshy leaves. The incision of the mid-lobe of the leaves reaches to about a third of its length. The lateral lobes are unsymmetric, the upper incision reaching to about the fourth, the lower to the half part of the lobe or still deeper.

The variety was found in S. Patagonia, at Rio Fósiles on grassy, moss-covered, watery slopes as well as associated with *Bolax glebaria* Comm. D.

P. 631:

AZORELLA SELAGO Hook. f.

The plant belongs to *A. cæspitosa* Cav. (fide Skottsb. Rio Chico de Sta. Cruz.).

P. 631, insert line 7, from foot:

A. TRIFOLIOLATA Clos.

Leaves long-petioled, trifoliolate, leaflets oblong-linear trifid; their lobes oblong, obtuse, glabrous; petioles sometimes ciliate at base; umbels shorter than the petioles, 20–30-flowered; involucral leaves about 10, oblong, basiciliate, about as long as the pedicel.

S. Patagonia, Lago Argentino on marshy ground; Mid-Patagonia, near Lago Buenos Aires; N. W. Patagonia, Rio Reñihue.

A. TRIFURCATA (Gaert. & Hook.).

Occurs also in N. Patagon., Territory of Neuquen.

P. 632:

A. UTRICULATA Gris.

Found also in W. Patagonia, in the upper valley of Rio Aysén. (Determined by Dr. K. Domin.)

P. 632, add after line 14, the species:

A. CONCOLOR Rendle.

Small cæspitose, glabrous shrub, branches short, with nigrescent persistent leaves; the young leaves bright green, with broad amplexicaul sheaths, trifurcate lamina, rigid lobes, apex shortly pungent, and subtriquetrous. Umbels acrogenous, sometimes in pairs, 1–2-flowered; peduncle very short, involucre trifid; lobes linear-triangular, acute; pedicels a little longer. Flowers not surmounting the highest leaves. Sepals short, triangular, obtuse. Fruit . . . Has crowded ultimate branches from a flat, turfy growth.

Mountain tops of Burmeister Peninsula. Near *A. lycopodium* Gaud., but the leaf-segments are not polished, and are blunt and simply mucronate. Leaf-lobes are 2 mm. long (4 mm. in *A. nivalis* Phil. of Chili).

S. Patagonia, Lago Argentino, in mountains above the forest line; at Rio Fósiles, on bare ground about 1000 m. high.

P. 632:

ASTERISCIUM Cham. et Schlecht.

A. FIMBRIATUM Speg.—Speg. Plant. Pat. austr., p. 523.

N. B. Spegazzini in describing the plant, called attention to its systematic place being uncertain. Since that the question has not yet been cleared up.

MULINUM Pers.

P. 633:

M. LEONINUM Lor.

Should be deleted, being identical with *Mulinum spinosum* Pers.

M. LAXUM Phil.

Flexuous, loosely branching, leaves 3-partite, segments linear, subequal; mouth of sheaths slightly pilose; peduncles long, with about 15 flowers; pedicels 4 times as long as the ovate capsule.

In S. Chili; N. W. Patagonia, in the upper valleys of Rio Manso and Rio Reñihue; W. Patagonia, by Rio Baker.

P. 634:

M. LYCOPODIOPSE Speg.

Spegazzini's description of the plant and especially of the fruit gives rise to the suspicion that this species belongs to the genus *Azorella* rather than to *Mulinum*.

M. MICROPHYLLUM Pers.

Also in N. W. Patagonia, Rio Reñihue; Mid-Patagonia, near Lago Buenos Aires; S. Patagonia, common in the steppe, for instance at Golfo de San Jorge, Puerto San Julian, Sta. Cruz and at Rio Gallegos.

M. MORENONIS (Ok.) Speg.

Also in S. Patagonia, on the east coast, at Golfo de San Jorge.

MULINUM PROLIFERUM (Cav.) Pers.

Should be deleted, being identical with *Mulinum spinosum* Pers. or, more properly, with one of its forms or varieties.

P. 635:

M. SPINOSUM Pers.

Is a very variable species. The variety with trifid leaves and spiniform, rather long lobes is the commonest one in all Patagonia.

M. ULICINUM Gill. et Hook.

Should be struck out; Macloskie's statement of this species occurring in Patagonia is based on an erroneous determination. Dr. K. Domin, preparing a monograph of the genera *Azorella* and *Mulinum*, has kindly informed me that *M. spinosum* Pers. is only a variety of *M. ulicinum*. This variety is, as far as I am aware, not yet described.

The plant reminds us, as to its aspect, of *Mulinum cuneatum* Hook. et Arn. It is, perhaps, not impossible that Spegazzini's statement of *M. ulicinum* having been found in S. Patagonia, at Rio Sta. Cruz, concerns this variety, *Mulinum spinosum* of Pers. The variety was collected by Hatcher at Rio Chico, by Dusén at Rio Sta. Cruz. D.

P. 633:

M. CUNEATUM Hook. et Arn.

According to Spegazzini, Plant. Pat. austr., p. 524, this species occurs in S. Patagonia, at Rio Sta. Cruz, in my opinion a somewhat doubtful statement. See under *Mulinum ulicinum*. D.

SANICULA L.

P. 636:

S. MACRORHIZA Colla.

Syn. *S. graveolens* DC.

N. B. The name given by Colla is the older one; *Sanicula graveolens* is therefore to be placed as a synonym.

ERYNGIUM L.

E. AGAVIFOLIUM Gris.

Should properly be struck out. In the reports of the Rio Negro Expedition the authors of the botanical parts, Lorentz and Niederlein, mention a tall *Eryngium* growing in the pampa and take it, with some hesitation, to be *E. agavifolium* Gris. They compare the plant also with *E. sanguisorba* Cham. et Schlecht. It is very probable that the plant in question actually belongs to *E. agavifolium* Gris. Neither Hieronymus nor Spegazzini mentions this species as occurring in the Rio Negro district or in other parts of Patagonia; but a plant man-high, as it is, can scarcely be overlooked, and it is therefore very improbable that this species occurs in Patagonia.

P. 637:

E. HUMIFUSUM Clos.

Should be eliminated, not being known from our district.

E. PANICULATUM Cav.

This species occurs also in N. W. Patagonia, at Rio Reñihue.

P. 638:

OSMORHIZA Raf.

Delete *O. claytoni*, as the Hatcher specimen belongs to *O. berterii* DC.

OREOMYRRHIS Endl.

O. ANDICOLA (H.B.K.) Endl.

Mexico, S. America on the Cordillera southwards at least to Argentina, S. Fuegia, Falkland Ids., Tasmania, New Zealand. No Patagonian locality is known to me. See Engler und Prantl, die nat. Planzenfam., III, 8, p. 163. (D.) (Its occurrence on the Falkland Is. requires its retention here; also in S. Fuegia.)

O. DAUCOIDES Urb.

Basal leaves 50–70 cm. long, tripinnate on pinnatisect peduncles, the lower paired; in fruit a half meter long; the upper oppositifoliose; involucral leaves mostly pinnatifid. Fruiting pedicels 3–5 times as long as the fruits.

Peru.

Is often noted as a synonym of the foregoing species; according to Urban an independent species belonging to the flora of Peru; by O.

Drude—in Engler und Prantl, die Nat. Planzenfam., III, 8, p. 164—supposed to be a subspecies of *Oreomyrrhis andicola.*

P. 639:

APIUM L.

Concerning the species of this genus I shall venture on only a few remarks. D.

A. AMMI (Jacq.) Urb.

(Described in Macl., p. 640, sub syn. *Apium leptophyllum* (DC.) F. Muell.)
N. B. Jacquin was the first who described this species.

A. CHILENSE Hook. et Arn.

Macloskie's statement about this species having been found at Coy Inlet is erroneous and refers to *Apium graveolens* L. (Dusén). Why not *Apium graveolens* L.? (Skottsberg.)

P. 640:

A. PROSTRATUM Labill.

Not being found either in Patagonia or in Magellan, this species is to be eliminated.

A. RANUNCULIFOLIUM H.B.K.

May be omitted; not known from our district.

LIGUSTICUM L.

P. 642:

L. PEUCEDANOIDES Presl.

This species has not, as far as I am aware, been found in Patagonia.

P. 643, add to *Umbelliferæ* (at 4 lines from foot of p. 643):

POZOA Lag.

(This and *Bolax* have contracted mericarps.) Fruit quadrangular, 5-ribbed, crowned by the calyx. Mericarps dorso-concave, channeled; commissure very contracted. Herbs; leaves long, silky, simple, cuneate, deeply toothed above, 5-nerved. Umbel simple, involucre absolutely lobed.

1. P. HYDROCOTYLIFOLIA Field et Garden.

Syn. *Azorella hydrocotylifolia*, described above, p. 629, no. 11.

Chili; Mid-Patagonia, Chubut, on watery meadows in the Cordillera.

2. P. CORIACEA Lag.

Central and South Chili; N. W. Patagonia, by Rio Reñihue.

SCHIZEILEMA Domin, n. gen.

(In Hooker's Flor. Ant. a subgenus of *Pozoa*, chiefly found in New Zeal., 2 of its species in S. Patagon.)

Umbelliferous, with the habit of *Hydrocotyle* and *Huanaca;* but the densely compressed mericarps resemble *Azorella;* whilst the leaf-structure, having no leafsheaths, and the unsegmented pedicel, and large calyx-teeth are unlike *Azorella*, and more like *Huanaca.* The fruit is peculiar, prismatically quadrangular, with rounded angles, the side-view narrow; ribs scarcely visible, always 5 (not 3). Exocarp leathery, separable from endocarp. Umbels simple, pedunculate, and flowers mostly pediceled; petals straight, and calyx-teeth half as long; mericarps dorsally compressed, and slightly convex. Seed straight, oblong. Plants generally glabrous with reniform or orbicular, simple or lobed leaves, long, stipulate. The Patagonian species have a carpophore.

S. RANUNCULUS Dom. n. comb.

Syn. *Azorella ranunculus* d'Urv., *Pozoa ranunculus* Hook. f.

Stem slender, repent, small. Exocarp mostly soluble.
Falkland Is.

S. TRILOBATUM Dom. n. comb.

Syn. *Azorella trilobata* Dus. Rhizome thicker, shorter; exocarp more cohering with endocarp. Patagonia.

BOLAX.

Calyx entire; petals oval, entire. Styles short. Fruit quadrangular, the faces of mericarps concave, jugæ 5, smooth, 1 dorsal; 2 mid-jugæ forming the angles. Leaves imbricate, trifid, glabrous, coriaceous; lobes ovate, obtuse, not ciliate. Umbels simple, subsessile, 4-flowered. Involucral bracts for the pedicels. Young fruits stellately hairy.

1. B. BOVEI (Speg.) Dus.

Syn. *Azorella bovei* Speg., described in Macl., p. 627, no. 5.

Occurs in Staaten Id.; S. Fuegia, the islands; W. Magellan.

2. BOLAX GLEBARIA Comm.

Syn. *Azorella glebaria* (Comm.) A. Gray. Described, with the distribution, in Fl. Pat., p. 628, no. 9.

It occurs throughout Patagonia, except the southern parts; in the mountains it is found somewhat below, but principally above the upper forest line; never in the steppes. Also in Fuegia, and Falkland Is.

Add Macl., p. 643:

LARETIA Gill. et Hook.

Calyx-teeth prominent. Petals apically inflexed, very imbricate. Disk thick, depressed. Fruit dorsally compressed, mid contracted. Carpels discoid, the face slightly convex, the back concave or plane. Jugæ slender, the lateral pair marginal. Carpophore undivided. Seed straight, flat dorsad. Leaves rosulate, entire, with entire sheath. Herb with short cæspitose stem; simple sessile, many-flowered umbels. Involucre of bracts. Fruit proportionately large.

L. ACAULIS (Cav.) Gill. et Hook.

Only species in Engl. & Prantl, III (8), 133, fig., making a cushion, in the Cordillera, at 3000 m. elevation.

Stem low, densely cæspitose; leaves rosulate, the upper small, scarious, involucral. Umbels simple, sessile. Calyx-teeth prominent; petals inflexed at top; fruit with very narrow commissures; carpels discoid, faces subconcave. Carpophores undivided.

Only species in Chili. Central Chili, in the Cordillera; S. Patagon., Rio Sta. Cruz, and Arroyo Scheuen, on the river banks.

Fam. 83. ERICACEÆ.—Macl., p. 644.

P. 646, 647:

The cuts on these two pages are transposed. That with *Pernettya empetrifolia* represents *P. mucronata*, and conversely. (G. M.) *Pernettya empetrifolia* Gaud. is only a synonym of *P. pumila* (L. fil.) Hook. (fide Skottsberg).

I am not well up myself in the study of the genera belonging to this family, and a thorough revisal of Macloskie's representation of the species must therefore be omitted, the more so as the material at hand is very slight. A revision of the gen. *Pernettya* would probably cause a reduction of the number of species. D.

VACCINIUM L.

P. 649:

V. ULIGINOSUM L. var. PATAGONICUM Macl.

Though I have not seen any specimen of this variety, I cannot suppress a certain doubt concerning the correctness of this determination. The berries are said to be red and edible, characters which apply to most of the *Pernettya* species. Perhaps the plant belongs to the genus *Pernettya?* D.

Fam. 84. EPACRIDACEÆ.—Macl., p. 649.

LEBETANTHUS AMERICANUS Endl.

Is only a synonym of *L. myrsinites* (Lam.) Endl. It is one of the commonest plants, and characteristic of the Region of evergreen forests in Fuegia and Patagonia

Fam. 85. PRIMULACEÆ.—Macl., p. 650.

P. 650:

PRIMULA FARINOSA L. var. MAGELLANICA (Lehm.) Hook. fil.

Occurs in S. Patagonia, by Lago Argentino, at Lago Viedma, about 400 m., at Lago San Martin, about 500 m., at Rio Fósiles, about 900 m.; in N. W. Patagonia, at Rio Puelo; S. Chili, Cordillera de Villarica.

P. 651:

ANDROSACE OCCIDENTALIS Pursh.

Should be deleted; Macloskie's determination referring to *Androsace salasii* F. Kurtz:

P. 651, add at foot of the page:

A. SALASII F. Kurtz.

Syn. *A. septentrionalis* Speg., non Lin.

Described and figured in Fl. Pat., p. 670, under the false name of *Collomia pusilla*.

S. Patagonia, by Rio Gallegos and Coy Inlet; Puerto San Julian; Golfo de San Jorge; Lago San Martin; Mid-Patagon., along Rio Carrenleofú.

Delete its synonym, *A. septentrionalis* Speg.

P. 652:

SAMOLUS LITTORALIS Brown (1810).

Must yield precedence to *Samolus repens* Persoon (1805).

S. SPATHULATUS (Cav.) Dub. (Plate XXI).

Is found also in N. Patagonia, Territory of Neuquen.

P. 653:

ANAGALLIS ALTERNIFOLIA Cav.

Is found also in N. Patag., Territory of Neuquen.

P. 653, insert at foot of the page:

A. ALTERNIFOLIA Cav. var. REPENS (d'Urv.) Kunth.

Stem thick, sulcate, often sending out roots at angles. Leaves alternate, broad-ovate, rarely roundish, acutish, basiacuminate, nearly sessile. Pedicels short; calyx half as long as the corolla, its lobes linear, acute, entire, glabrous. Corolla rotate-campanulate, with long lobes, which are acuminate. Filaments united below and adnate to the corolla-base. Style as long as stamens.

Fuegia; Falkland Is.

P. 653:

ASTEROLINUM SERPYLLIFOLIUM (Poir) Bell.

The plant so described belongs to the allied genus *Pelletiera*, and we must change its name. Hence, delete this, and add:

PELLETIERA St.-Hilaire.

Perianth completely free; stamens 3, and capsule 3-valved. Seeds 2 (?).

P. SERPYLLIFOLIA (Poir) Webb et Berthelot.

Described in Fl. Pat., as *Asterolinum serpyllifolium.*

Found in Uruguay, Argentina, Chili, Canary Ids. (not in S. Europe); in N. Patagonia, at mouth of Rio Negro.

Fam. 86. PLUMBAGINACEÆ.—Macl., p. 654.

Statice macloviana (Cham.) and *S. punicea* Rendle are synonyms of *S. chilensis* (Boiss.), fide Dusén for *S. macloviana*. Professor Skottsberg calls it *Armeria macloviana* Cham.

STATICE PUNICEA Rendle.

This is a new name of *Armeria chilensis* Boiss. of DC. Prodr., xii, 681, from Magellan; to avoid confusion with *S. chilensis* Phil. Has smaller heads and flowers than *Statice andina* Boiss (*Armeria andina* Poepp.) and narrower leaves. (Is called *Statice armeria* in Flora Antarct., but is not the British plant, fide Rendle.)

ARMERIA ALPINA Willd.

Glabrous, with several heads; leaves linear-lanceolate, obtuse, 1-nerved or obscurely 3-nerved, fleshy. Ovate border-leaves of involucre half as long as inner acutish bracts which are dorsally purplish. Pedicels half as long as calyx-tube; corolla-lobes awned.

European Alps; Falkland Is.

Fam. LOGANIACEÆ.—Macl., p. 658.

P. 658, add 3 lines from foot of page:

BUDDLEIA CONNATA Ruiz et Pav.

Tomentum disappearing; leaves oblong elliptical or lanceolate, acuminate, serrate, narrowing baseward, auriculate-connate; glabrous above and rugose. Heads globose, densely many-flowered, long-peduncled; few in a raceme at ends of branches. A shrub, man's height.

Peru, N. Patagonia, Territory of Neuquen.

P. 658:

B. CORDOBENSIS Gris.

Syn. *B. nappii* Lor.

Characters in p. 659, no. 4. It occurs also in N. Patagonia, Territory of Neuquen.

B. GLOBOSA Lam.

Occurs also in N. Patagon.; by Lago Nahuel-huapi; and in Territory of Neuquen.

P. 659:

BUDDLEIA NAPPII Lor.

Is to be deleted, being a synonym of *B. cordobensis.*

Fam. 90. GENTIANACEÆ.—Macl., p. 660.

Say ERYTHRÆA L., instead of *Erythræa* (Neck.).

E. AMEGHINOI Speg.—Speg. Nov. Add. Flor. Patag., II., p. 31.

Mid-Patagonia, Chubut, Lago Colu-huapi.

E. CHILENSIS Pers.

Also in N. Patagonia, near Colonia October 16.

P. 661:

GENTIANA.

G. MAGELLANICA Gaud. and G. PATAGONICA Gris.

It may be questioned, I think, whether the latter species is not synonymous with the former one. During my travels in Fuegia and S. Patagonia I very often met with numerous specimens of a *Gentiana*, all referring to *G. magellanica* Gaud., or in so few cases to a variety of that species. In my representation of the vegetation of Fuegia and Magellan—die Gefässpflanzen der Magellansländer, p. 137—I have incorrectly stated that *G. patagonica* Gris., instead of *G. magellanica* Gaud., occurs in the peraustral parts of S. America. *G. patagonica* Gris. is unknown to me and seems to be a very doubtful species, probably identical with Gaudichaud's species, this being already accentuated in other works. D.

P. 662:

G. PROSTRATA Haenke and G. SEDIFOLIA H.B.K.

Concerning these two species I refer to E. Gilg, Beiträge zur Kenntniss der Gentianaceæ. III. Gentianaceæ andinæ.—Fedde, Repertorium, II, 1906, p. 51.

Fam. 91. APOCYNACEÆ.—Macl., p. 663.

P. 663:

GRISEBACHIELLA HIERONYMI Lor.

N. Patagon.; Territory of Neuquen.

Fam. 92. ASCLEPIADACEÆ.—Macl., p. 663.

P. 663, line 9, add the genus:

ELYTROPUS Muell.

Carpels immersed in fleshy disk, with epigynous lobes. Leaves opposite. Flowers bracted, solitary in the axils. Corolla broad campanulate, with very short tube, its short lobes, overlapping dextrorsely, scarcely contorted. Stamens included; seeds apically comose. Peduncles mostly 1-flowered, bracted. No glands in calyx; no annulus on stigma.

Climbing shrub. Chili.

E. CHILENSIS (Hook. & Arn., sub Echites).

Stem twisting, rusty-pubescent; leaves 5–10 cm. long, ovate, slightly acuminate, short-petioled, subcordate, hairy. Peduncles axillary, as long as the flower; bracts numerous, small, hairy, imbricate, ovate; calyx-lobes erect, lanceolate; corolla with tube as long as the calyx, with ovate lobes. Stamens included.

Chili; N. W. Patagonia, by Rio Reñihue.

P. 664:

TURRIGERA LESSONII K. Sch.

Is not known from Patagonia.

P. 665:

MELINIA CANDOLLEANA (H. & A.) Dcne.

Ought probably to be omitted. It certainly does not occur at Rio Sta. Cruz, as stated by Macloskie, and scarcely occurs in Patagonia.

P. 665, after line 20, add the genera *Asclepiadaceæ:*

5. ARAUJIA Broth. (Lagena Fourn.).

Winding shrubs with leaves rather mealy; and cymose, paired inflorescence. Corolla with long tube, salverform; glabrous or mealy.

Brazil.

1. A. CYNANCHÆ.

Anthers ending in an inflexed membrane, polliniferous from below the disk of the stigma. Pollinia solitary in the thecæ, pendulous. Corolla-tube wide, often contracted upwards, the limb broader, 5-cleft. Corolla-scales 5, fixed midway in the tube. Stigma with a boss, or 2-beaked. Cyme 2–few-flowered, on a short axillary peduncle; flowers rather large.

2. ARAUJIA MEGAPOTAMICA G. Don.

Syn. *A. fusca* Gris.

Twining glabrous shrub. Leaves sagittately cordate, acuminate; peduncles 1–flowered; lobes of tree staminal crown-toothed.

Brazil; Argentina.

Also after *Araujia*, the genus.

PHILIBERTIA H.B.K. (being American species of *Sarcostema* Decne. as in DC. Prodr., viii, p. 539).

Throat of corolla naked; staminal crown usually double; leaves fleshy, ligulate, or rounded-tumid. Outer crown adnate to base of corolla, membranaceous, its margin entire; caudicles of pollinia not appendaged; corolla lobes contorted, covering each other dextrorsely. Corolla broadly campanulate, more or less 5-cleft; scales of inner crown 5, broad; joining the staminal base. Stems winding hoary, or villous.

P. CYNANCHOIDES Dcne.

Twining, glabrous, puberulous when young. Leaves cordate, attenuate, petiolate. Peduncles many-flowered, exceeding the leaves. Segments of corolla ovate, extrorsely pubescent, silky, introrsely papillose. Leaflets of outer crown slightly exceeding the gynostegium; follicles ovate, tomentose.

Mexico.

P. GILLIESII H. & A.

Twining. Leaves glabrous or nearly so. Flowers densely hairy, outer crown sinuately 5-lobed, inner with oval leaflets, acuminate, equaling the gynostegium; stigma rostrate.

Madagascar. North Patagon., near Carmen de Patagones; mouth of Rio Negro; Puerto San Antonio. Leaves smaller and thicker than the type. Closely pubescent and hispidulous on both sides.

P. SOLANOIDES H.B.K.

Branching and twining shrub, with opposite pubescent branches, and opposite, petiolate, oblong acute leaves, entire and marginally wavy, and interpetiolar peduncled umbels, 8–10-flowered. Calyx 5-partite, the segments narrow-lanceolate; corolla white, campanulate, 5-lobed, the lobes acute, with a small lobe in each sinus. Bracts linear.

Brazil, Patagonia.

P. GILLIESII Hook. & Arn.

Differing from the type in having leaves smaller and thicker, closely and briefly pubescent, hispidulous on both sides.

N. Patagonia, near Carmen de Patagones, mouth of Rio Negro; Puerto San Antonio.

P. 665, after *Philibertia*, add the genus of *Asclepiadaceæ*.

7. CYNANCHUM Linn.

Corolla campanulate or rotate, its lobes dextrorsely overlapping; a membranaceous crown affixed to the staminal tube; broad, tubular, cup-like or annular, 5-lobed, with 5 scales in the throat. Stigma convex, or conic, erostrate. Pollinia solitary in the thecæ. Twining herbs or under-shrubs, with opposite, heart-shaped or hastate leaves. Chiefly of the Old World.

1. C. BULLIGERUM (Speg.)

Syn. *Vincetoxicum bulligerum* Speg.

Crown very deeply parted or its segments distinct.

Mid-Patagonia, along Rio Carren-leofú.

P. 665:

2. C. (section CYNOSTOMUM) PACHYPHYLLUM.

Leaves glabrous, lanceolate or oblanceolate, basiobtuse, or subemarginate, apex acute, margins revolute, pale underneath. Cyme extra-axillary, few-flowered. Corolla campanulate, its petals erect, oblong. Staminal crown membranaceous, surrounding the gynostegium, 5-lobed, lobes truncate. Follicles smooth, ovate, acuminate.

Chiloe, etc.

C. PACHYPHYLLUM Dcne., K. Sch.

Crown-lobes 5, stalked, higher than gynostegium. Flowers white, leaves broad, lanceolate or ovate, coriaceous.

Southern Chili; northern section of West Patagonia.

Fam. 93. CONVOLVULACEÆ.—Macl., p. 665.

P. 666, line 16, add the species:

DICHONDRA ARGENTEA Willd.

Leaves reniform, basicuneate, apex retuse, rarely subemarginate, silvery-silky both sides. Corolla villous, exceeding the calyx. Perennial herb.

Mexico; Argentina; N. Patagonia, between Rio Negro and Rio Colorado.

D. REPENS Forst.

Leaves round kidney-shaped, petiolate-pubescent, green both sides; corolla yellow, glabrous, not exceeding the calyx; 2.5 to 4 cm. long. Small creeping perennial.

Widely distributed in N. and S. Amer.; Australia; New Zeal.; S. Afr.; E. Indies; Japan; China, etc. In N. Patagonia, at Rio Negro.

WILSONIA R. Br.

P. 666:

W. HUMILIS R. Br.

Should be struck out, not being found in Patagonia.

The plant now in question was found by me at Puerto Madryn, on the east coast of Patagonia, and has been noted in my representation: "Beiträge zur Flora der Ostküste von Patagonien—Wissenschaftliche Ergebnisse der schwedischen Exp. nach den Magellansländern, Bd. III, no. 5, p. 255. It was not stated there that the plant coincides with *Frankenia cymbifolia* Hook., but only that it resembles and may be compared with that species. But the plant turns out to be a true *Frankenia* and agrees with *Frankenia patagonica* Speg. (described in Macl., p. 579). D.

EVOLVULUS L.

P. 667:

E. INCANUS Pers.

This species is known also from Argentina and N. Patagonia, Rio Colorado, Rio Negro.

CALYSTEGIA R. Br.—Macl., sub *Convolvulus.* L., p. p.

(*Calystegia* is separated from *Convolvulus* by having two large bracts rather close to the flower.)

C. SEPIUM R. Br.

Known also from N. Patagonia, Rio Negro.

P. 667, 6 lines from foot, add the species:

2. CONVOLVULUS ARVENSIS Linn.

Stem striate, angulate, often prostrate. Leaves sagittate, subauricled; peduncles usually 1-flowered, 2-bracted (bracts small, remote). Sepals ovate-rotund; corolla white or pink. Capsule smooth.

Widely distributed in Europe, Asia, N. Africa, and America; in North Patagonia in the district near the mouth of Rio Negro.

3. C. LACINIATUS Desv.

Stem filiform, scarcely 3 cm. long. Leaves pinnatisect, the segments filiform, petiole short. Peduncles equalling the leaves, 1-flowered, straight; pedicels 6 mm. long, bracts linear, acute. Sepals ovate, acutish, as long as the leaves; outer red-silky; all becoming glabrous; capsule glabrous.

S. Chili; Brazil; Argentina; N. Patagonia near the mouth of Rio Negro.

Fam. 94. POLEMONIACEÆ.—Macl., p. 667.

Our views as to the genera and species of this family have been somewhat revolutionized by the researches of A. Brand, published in Engler's Pflanzenreich, IV, 250 (1907).

1. He fixes the limits of the genera by help of the fact that *Gilia* and *Phlox* have the mature calyx at length ruptured by the growth of the fruit, and their leaves may be alternate or opposite; whilst the species which are not thus ruptured, and whose leaves are always opposite are made to form the genus *Navarretia*. *Collomia*, in distinction from all these, has folds in the sinuses of the calyx, and no rupturing with the enlarging of the fruit; and *Gymnosteris* is set apart by its leafless stem. He also cuts up the genus *Gilia* into subgenera and sections, and establishes some subspecies as well as varieties under them.

2. The following is an exhibit of his system, as applied to the Patagonian forms.

*A*1. (Non-Patagonian trees or shrubs, as *Cobœa*.) Embryo white.
*A*2. Herbs, with greenish embryo. Subfamily *Polemonioideæ*.
  *b*1. Corolla regular, except 2 species which have leaves pinnatifid, the lower segments mere setæ. Tribe *Polemonieæ* (including all the Patagonian forms).

*c*1. Calyx-tube leaf-like, veined. Leaves pinnate. *Polemonium.*
*c*2. Calyx-tube all, or chiefly whitish. Cauline leaves entire or pinnatifid, or palmately divided, or rarely 0.
  *d*1. Calyx-sinuses with membranous folds; enlarged in fruit and not rupturing. *Collomia.*
  *d*2. Calyx sinuses without folds, on maturity usually rupturing to its base.
    *e*1. Stamens unequally inserted, included in the corolla-tube. Leaves entire. Seeds not changing under water. *Phlox.*
    *e*2. Stamens evenly inserted, if otherwise, the leaves are then pinnatifid. Seeds mucilaginous or spirilliferous under water. When stamens are included, leaves entire.
      *f*1. Calyx-teeth equal, if ever unequal then the corolla is campanulate.
        *g*1. Stem leafy. *Gilia.*
        *g*2. Stem leafless. *Gymnosteris.*
      *f*2. Calyx-teeth unequal; leaves never opposite. *Navarretia.*
(*b*2 is non-Patagonian, mostly bilabiates.)

3. The following are the Patagonian species, according to Brand's system.

P. 668:

COLLOMIA BIFLORA (Ruiz et Pav., 1798) Brand vice syn. PHLOX LINEARIS Cav. (1801), described p. 668.

Bolivia; N. Chili; Uruguay; Patagonia, western part, principally in the district of the deciduous beeches; known from the confluence of Rio Limay with Rio Neuquen, at least as far as Ultima Esperanza.

P. 668:

C. GRACILIS Dougl.

Is to be changed to *Gilia gracilis* (Dougl.) Hook., described p. 668.

From Alaska to Lower California; Peru; Bolivia; Chili; Patagonia and Fuegia.

Subsp. EUGRACILIS Brand var. ERITRICHOIDES (Gris.) Brand.
Syn. *Collomia chubutensis* Speg.

P. 669:

C. LINEARIS Nutt.

The South American form is accepted as a distinct species by Wildeman, called *C. coccinea* Lehm. ex Benth., as "admitted by English authors" (Voyage du S. Y. Belgica, p. 142). (G. M.)

C. NAVARRETIA (Ruiz & Pavon).

Leaves pinnately multifid; their segments linear-subulate; flowers purple, capitate, involucrate by many bracts; stems downy, simple or nearly so. Sepals 2-toothed; stamens exserted; stigma bifid. (Index Kewensis makes *C. navarretia* Don = *Gilia navarretia.*)

N. Amer.; Mid-Chili; Argentina; Patagonia, Chubut, along Rio Carrenleofú.

P. 670: The name *Collomia pusilla* is to be extinguished. See *Androsace salasii*, supra, p. 197.

P. 668:

GILIA.

Note by Brand: "Species are found intermediate between *Gilia* and *Phlox* so as to make it difficult to place them. But *Gilia* is very different from *Collomia* as to its calyx, though its species have often been joined to *Collomia.*" The calyx of *Gilia* is destitute of sinus-folds.

G. ACHILLEÆFOLIA Benth.

Is not reported as native in any part of S. America, and is to be deleted.

P. 671:

G. CAMPANULATA Gray.

Is not reported by Brand as occurring in S. Amer. The Hatcher specimen needs verification.

P. 671: Insert *G. gracilis* (Dougl.) Hook. (described in p. 668 as *Collomia gracilis* Dougl., with distribution).

P. 671: The *G. erecta*, here named under no. 3, is made by Brand a variety under *G. laciniata*, var. *recta* (Hieron), having the leaf-segments broader, somewhat fleshy; calyx-teeth nearly equaling the tube.

P. 671:

G. NAVARRETIA Steud.

Is transferred by Brand to genus *Navarretia.* See below.

P. 671:

GILIA NUDICAULIS Gray.

Is transferred by Brand to genus *Gymnosteris* Greene, having leafless stems. As Brand confines this to North America, further verification of my identification of the Peterson specimen is required.

Add Macl., p. 671:

G. PATAGONICA Speg.

Branches slender, erect, 10 cm. long. Radical leaves rosulate, entire or sparingly pinnatifid, cauline entire. Flowers solitary, long-pedicellate; calyx tubular-campanulate, subglandulose, teeth as long as the tube. Corolla 7 mm., half exceeding the calyx, its lobes ovate, very short. Stamens exsert; style shorter than corolla. Capsule ovoid, shorter than calyx. Seeds numerous, rufescent.

Argentina; Patagon., at Rio Sta. Cruz; Lago Argentino.

P. 672:

G. POLYCLADON Torr.

Is a N. Amer. plant; the identification of the Hatcher specimen needs to be verified.

Add Macl., p. 672.

G. VALDIVIENSIS Griseb. (*G. laciniata* Benth., non R. & P.)

Erect, 7–40 cm. high. Leaves bipinnatifid, segments linear-filiform. Few-flowered cymes, on short pedicels, or flowers 1–2, long-pedicellate; corolla blue, throat striate; stamens declinate, filaments short; style equalling the tube.

Argentina and Patagon.; Province of Chubut, south to Rio Gallegos.

P. 672:

Subsp. HUMILIS (Dougl.) Brand.

The range of this subspecies coincides with that of the other species.

Subsp. HUMILIS (Dougl.) Brand var. MICRANTHA (Kellogg).

Known over the whole district of the subspecies.

Subsp. HUMILIS (Dougl.) Brand, var. MICRANTHA (Kellogg) Brand, subvar. ANGUSTIFOLIA Brand.

Known from Vancouver Id. to Magellan; the range of this variety is larger than of any other form of the species.

Subsp. HUMILIS (Dougl.) Brand var. MICRANTHA (Kellogg) Brand subvar. SPATHULIFOLIA Speg.

S. Patagonia, Golfo de San Jorge.

P. 672:

G. PUMILA Nutt. See p. 672, no. 7.

P. 671:

GILIA LACINIATA Ruiz et Pav. (described in Macl., p. 671, no. 3).

G. LACINIATA Ruiz et Pav. var. ERECTA (Hieron.) Brand.

Leaf-segments broader, and somewhat fleshy; calyx teeth as long as the tube.

In N. Patagonia, about the mouth of Rio Negro; Mid-Patagonia, Puerto Madryn; S. Patagonia, by Rio Deseado.

The type of the species is not known from Patagonia. According to Brand its southern limit is in Argentina, at Sierra de la Ventana in the Province of Buenos Aires.

Dusén notes in this connection, that a form collected by him in the upper valley of Rio Sta. Cruz represents, according to A. Brand, a transition between *G. crassifolia* Benth. et Gill. and this last-named variety *erecta*, of *G. laciniata* R. & P.

GYMNOSTERIS Greene.

Calyx-tube membranaceous with slightly unequal teeth; corolla salver-shaped; orange anthers in its throat. Ovules numerous; seeds winged. Low, annual; flowers in terminal heads, supported by involucral leaves, instead of foliage leaves.

G. NUDICAULIS (Hook. & Arn.) Greene.

Syn. *Collomia nudicaulis* H. & A., *G. nudicaulis* A. Gray (described in Fl. Pat., p. 671).

In western U. S., and in Patagon. by Rio Coy.

P. 673, add after line 3, the genus:

NAVARRETIA Ruiz et Pav.

Calyx obconical, or tubular-campanulate, lobes unequal. Corolla small, its lobes shorter than the slender tube. Stamens 5–4; style not longer than corolla, stigmas 2 or 3. Ovary 3–2-celled. Annual herbs, viscid or fœtid, the characters varying in different species. (In *Navarretia* the calyx is not burst by the pressure of ripening ovary; and its leaves are always opposite; *Gilia* and *Phlox* may have alternate or opposite leaves, and the calyx is finally ruptured by the growing fruit.)

Chiefly Equatorial and N. American, in California.

N. INVOLUCRATA Ruiz et Pav.

Vice syn. *Gilia navarretia* Steud., described p. 671.

Leaves pinnatisect, segments subulate, very acute. Heads small, dense-flowered; bracts hyaline at base. Calyx-lobes cleft to the base, into 2–3 linear spinescent segments, half as long as the tube. Corolla blue or white. Stamens exsert. Capsule ovoid, 2–3-seeded.

Andes, extending southwards to Rio Carren-leofú, and Chubut, Golfo de S. Jorge.

The following should be omitted, as non-Patagonian or non-Polemoniaceous:

Gilia campanulata.
G. polyclados Torr.
Polemonium micranthum Benth.
Collomia patagonica Speg. (is *Nicotiana alpina* Poepp. fide Stuckert et Brand.)

N. INVOLUCRATA R. & P. var. PUMILA Speg.

Very low, cæspitose stems, nearly none, leafless.

Mid-Patagonia, Teka-choique.

N. INVOLUCRATA R. & P. var. TRICHOPHYLLA Speg.

Leaves cauline, linear, entire.

S. Chili, and Patagonia.

P. 669:

COLLOMIA PATAGONICA Speg.

Is to be deleted, as the species represents plants belonging to *Nicotiana alpina* Poepp. (Spegazzini in litteris ex Brand, p. 54.)

P. 672:

POLEMONIUM Linn.

P. MICRANTHUM Benth. and P. ANTARCTICUM Griseb.

Are made by Brand not synonyms, but independent species, differing thus.

Stamens basally dilated; leaflets rounded; seeds brown, oblong.	*P. micranthum* Benth.
Stamens not dilated at base; leaflets ovate; seeds black, angled.	*P. antarcticnm* Griseb.

S. Patagonia; Fuegia.

P. 673:

P. ANTARCTICUM Griseb.

Annual, only 2–8 cm. high, diffusely branching, glandular hairy. Cotyledons oblong, persisting. Petioles long, leaflets ovate, 9–11. Flowers solitary, axillary and terminal, short-pediceled. Calyx campanulate, glandular, teeth lanceolate, as long as the tube; corolla white, campanulate as long as the calyx, lobes oval acute, shorter than the tube. Stamens inserted midway, not dilated basally, shorter than corolla. Style shorter. Ovary subglobose, cells 2–3-ovulate; seeds black, mucilaginous in water.

Antarctic S. Amer., at Rio Sta. Cruz, Coy Inlet, Magellan; Fuegia.

P. GAYANUM (Wedd.) Brand. (*Gilia gayana* Wedd. *Gilia diffusa* Phil.)

Annular, diffusely branching, glandulose, 10–15 cm. Radical leaves long-stalked, cauline short-stalked, leaflets 7–9, linear-lanceolate, acute. Flowers 2–3 together, pedicellate; calyx-lobes linear-lanceolate, longer than the tube. Corolla white, campanulate-rotate, shorter than calyx. Stamens inserted low, base not dilated; shorter than corolla. Style shorter. Capsule globose, 3–5-seeded. Seeds brown, spirilliferous under water.

Andes; Argentina; Mid-Patagon., by Rio Carren-leofú.

Fam. 95. HYDROPHYLLACEÆ.—Macl., p. 673.

P. 673:

HYDROPHYLLUM MAGELLANICUM Lam. and (p. 674) PHACELIA CIRCINATA Jacq.

Are both synonyms of *Phacelia magellanica* (Lam.) O. Ktze., described in Macl., p. 674, no. 3.

S. Patagonia, and Fuegia.

P. 674:

PHACELIA BRACHYANTHA Benth.

According to Spegazzini this species occurs in S. Patagonia, viz., in the upper valley of Rio Sta. Cruz very far from its proper district; it is not found elsewhere in Patagonia. A confirmation of its occurrence in our district is very desirable.

P. 675:

P. GLANDULOSA Nutt. var. PATAGONICA Ball.

Dr. A. Brand, the monographer of the Hydrophyllaceæ in A. Engler, das Pflanzenreich, has kindly informed me that the occurrence of a variety of *Phacelia glandulosa* Nutt., in Patagonia is not at all probable, the species occupying a small district in N. America; he adds that the present plant perhaps coincides with *P. nana* Wedd. known from Argentina. D.

P. 675:

P. PINNATIFIDA Wedd. var. PUMILA Ok.—Unknown to me. D.

Fam. 96. BORRAGINACEÆ.—Macl., p. 676.

P. 677:

PATAGONULA AMERICANA L. var. HIRSUTA.

Macloskie cites this variety as occurring in N. Patagonia. So far as I am aware neither the species itself nor the variety occurs in the district. D.

P. 677, line 9 from foot, add the species:

HELIOTROPIUM PARONYCHIOIDES A. DC.

Low, diffused, velvety anuual; with opposite and alternate leaves, obovate, oblong, basiobtuse, attenuate to a petiole as long; younger axillary spikes shorter than the leaf, dense-flowered, bractless. Calyx 5-partite, its lobes oblong, equalling the tube of the corolla. Nuts 4, smooth.

Chili; according to Spegazzini in N. Patagonia, by Lago Nahuelhuapi, and Mid-Patagon.; Lago Colu-huapi, and Colonia.

Note, p. 678, after line 13:

The three genera, *Lappula*, *Eritrichium* and *Allocarya* are thus distinguished. *Allocarya* has opposite leaves, *Lappula* and *Eritrichium* have alternate leaves. The ridge of hooked bristles on the nutlets distinguishes *Lappula* from the other two. The nutlets of *Eritrichium* are attached by their lower half, those of *Allocarya* by their upper half.

P. 678:

ERITRICHIUM HUMILE (Ruiz et Pav.) DC.

Should be deleted, being identical with *Allocarya humile* (Ruiz et Pav.) Greene.

Add p. 678, foot of page:

E. MESEMBRYANTHEMOIDES Speg.—Spegazzini Nov. Add. Flor. Patag., II, p. 38.

S. Patagonia, between Puerto San Julian and Rio Deseado.

Whether this species actually belongs to the genus *Eritrichium*, or rather should be placed in the genus *Allocarya*, cannot be decided at the present time, its nucule being unknown. By reason of its lower leaves being opposite, this species should probably be placed in the latter genus. (See note above.)

Perhaps *Eritrichium diffusum* Phil., *parvulum* Phil., and *uliginosum* Phil., mentioned by Macloskie, should be removed to the genus *Allocarya*. I am, however, not in a position to decide these questions. D.

P. 679, line 22, add the species:

PLAGIOBOTRYS TINCTORIA (Ruiz & Pav.) A. Gray.

Syn. *Eritrichium tinctorium* (R. & P.) DC.

Hispid, erect, branching annual, 5–10 cm. high; leaves sessile, linear-lanceolate, obtuse; racemes subfoliose; calyx densely hispid, lobes lanceolate; corolla-tube exceeding the calyx. Nutlets muricate, shining.

Chili; N. Patagonia, by Lago Nahuel-huapi; Mid-Patagon. along Rio Carren-leofú.

AMSINCKIA Lehm.

P. 679:

A. ANGUSTIFOLIA Lehm. var. MICROCARPA Speg.—Spegazzini, Nov. Add. Flor. Patag., II, p. 38.

This variety, occurring over all Patagonia, represents, according to Spegazzini, perhaps a distinct species.

P. 679, foot of page, add:

A. PATAGONICA Speg.—Spegazzini, Nov.

S. Patagonia, along Rio Sta. Cruz.

P. 679:

A. PSEUDOLYCOPSIOIDES (Clos.) Speg.—(*A. angustifolia* Lehm. var. *pseudolycopsioides*).

Erect, tall, simple, laxly branching. Leaves ovate-lanceolate; stamens inserted below the throat of the corolla. Plant 1–2 feet high, hairy.

P. 679, add at foot of page, genus:

VALENTINELLA Speg.

V. PATAGONICA Speg.

Leaves entire, dry, nigrescent, but not intensely bluish. Flowers white.

In South Patagonia, in dry places along Rio Chubut, near Lago Argentino, along Rio Deseado and Rio Chico (of Rio Sta. Cruz); Mid-Patagonia, near Lago Musters, at Puerto Madryn and along Rio Chubut.

LAPPULA Moench. (*Echinosperum* Sw.).

Nutlets indehescent, barbed with hook-like bristles. Styles short, stigmas subcapitate. Herbs with small alternate leaves, mostly incurved at base, and very small flowers.

L. PATAGONICA (Speg.).

S. Patagonia, near Puerto San Julian and along Rio Deseado; Mid-Patagon., Chubut, between Teka-choique and Rio Carren-leofú. Spegazzini has described this as a new species of the genus *Echinospermum*, but at the same time accentuates the possibility of its identity with *Echinospermum* (*Lappula*) *redowskii* (Horn.) Lehm.

Fam. 97. VERBENACEÆ.—Macl., p. 680.

VERBENA L.

P. 683:

V. ASPERA Gill. et Hook.

Macloskie has noted this species as known from Patagonia. I have not, however, succeeded in tracing his authority for this statement and, as far as I am aware, this species does not occur in our district. D.

P. 684:

V. CARROO Speg.

Is to be deleted by reason of its identity with *V. tridens* Lag.

P. 684:

V. CHAMÆDRIFOLIA Juss.

It is doubtful if this species occurs in our district. As far as I know, this plant has, up to now, not been found in Patagonia. According to Lorentz and Niederlein this species is not common in the pampas district, but they do not state its occurrence either at Rio Colorado or at Rio Negro. D.

P. 685:

V. ERINACEA Gill. et Hook.

Rather common in S. Patagonia, for instance at Golfo de San Jorge, in the mouth district of Rio Sta. Cruz, near Karr-aike by Lago Argentino, at Rio Leone, at many localities in the valley of Arroyo Scheuen, between Arroyo Sheuen and Rio Sta. Cruz, viz., at Manantial de la Trompa, etc.; according to Spegazzini common in Mid-Patagonia.

P. 685:

V. GAYANA Ok.

Should be deleted, as not known from our district.

P. 686:

V. GLAUCA Gill. et Hook.

Is not known in the district.

Verbena glauca cisandina Nied.

Occurs in N. Patag., Territory of Neuquen.

P. 686:

V. inflata H.B.K.

According to Macloskie this species was collected by Hatcher in S. Patagonia, at Rio Sta. Cruz. Though I have not had opportunity of seeing any specimen, the occurrence of this species in S. Patagonia seems to me to be doubtful by reason of the distribution of this plant. The specimens collected by Hatcher have been compared by Macloskie in the Gray Herbarium. I may, nevertheless, be allowed to express a slight doubt as to the correctness of the determination. D.

P. 686:

V. intermedia Gill. & Hook.

The southernmost locality of this species is at Sierra de Curumalan, in Argentina, near Buenos Aires, and it is scarcely to be found in our district.

P. 686:

V. ligustrina Lag.

Should be substituted instead of its syn. *Verbena Lorentsii* Nied.—Lorentz & Niederlein, Exp. Rio Negro, p. 264, pl. XII, f. T. Hieronymus, Sert. Patag., p. 370. Described Fl. Pat., 686, no. 15.

Rather common, at least in Mid-Patagonia and S. Patagonia.

Though Lagasca's description of *V. ligustrina* is brief and incomplete, it, nevertheless, seems to me to be evident that *V. lorentzii* Nied. is synonymous with *V. ligustrina* Lag.

This species is rather variable as to the form and size of the leaves and inflorescence. The most striking description is that given by Hieronymus. Comparing Lagasca's description with that by Hieronymus an exact accordance is to be stated between them, as the following parallel shows:

LAGASCA.	HIERONYMUS.
folia ovato-oblonga, scabra; marginibus revolutis, integerrima; spicæ cylindraceæ, terminales.	folia linearia vel ovato-oblonga, utrinque scabriuscula; marginibus revolutis integra; spicæ multifloræ, 1 ½–6 cm. longæ.

Lagasca's brief description corresponds very well with *Verbena lorentzii*

Nied. The specific name given by Lagasca tallies with this species, but not at all with any other Patagonian species of the present genus. D.

P. 687:

V. MORENONIS Ok.

Should be deleted, as being only a synonym of *V. patagonica* Speg.

P. 687, no. 18. The correct name of this species is *V. minutifolia* Phil. (1860), having synonyms *V. philippiana* Ok. (1893) and *V. microphylla* (non H.B.K.).

It occurs in N. Patagonia, near Lago Nahuel-huapi, and in Mid-Patagonia, along Rio Chubut. Described Fl. Pat., 687, no. 18.

P. 688:

V. SERIPHOIDES Gill. et Hook.

Occurs in N. Patagonia, near the Lower Rio Colorado; and its var. *lanigera* (Hieron.) occurs in S. Patag., near Rio Sta. Cruz. Is a synonym of *V. tridens* Lag. (fide Skottsberg).

Add:

V. SILVESTRIS Speg.—Spegazzini, Nov. Add. Flor. Patag., II, p. 66.

S. Patagonia, Lago Argentino, at Karr-aike and at several localities along Rio Sta. Cruz.

P. 688:

V. STRUTHIONUM Speg.

Should be eliminated, being identical with *V. tridactylites* Lag.

V. SUCCULENTIFOLIA Ok.

Occurs in N. Patagonia, Territory of Neuquen.

P. 699:

V. TONNINII Ok.

Should be deleted, being identical with *V. ameghinoi* Speg.

P. 690:

V. TRIDACTYLITES Lag.
Syn. *V. struthionum* Speg.

Rather common in S. Patagonia, for instance at Golfo San Jorge, Cabo Blanco, along Rio Sta. Cruz and Rio Gallegos, at Lago Argentino, in valley of Rio Leona, at Lago Viedma, in valley of Arroyo Scheuen, etc. By Lagasca stated to occur in the Falkland Ids. (mistake?). It is doubtful if the Hatcher specimen here cited does not belong to a different species. D.

P. 690:

VERBENA TRIDENS Lag.

Syn. *Verbena carroo* Speg.

This species is one of the commonest characteristic plants of S. Patagonia and of the southern section of Mid-Patagonia. Its range extends over the table-land, at least from Rio Gallegos to Lago Buenos Aires and on the east coast to the north of Golfo de San Jorge. It occurs also in the small transverse valleys between the river valleys, as well as here and there in the flat bottom of the main valleys, but does not thrive in the section near the forest district, and is there very rare. The southernmost locality known to me is situated in the Baguales district.

Philippi has, as far as I am aware, never identified *V. tridens* Lag. with *V. carroo* Speg., but the very brief description of the former given by Lagasca, as well as the more detailed description given by Philippi—Anal. Univ. Chil. Tom. xc, p. 612, shows clearly the identity of the species.

The inflorescence is not always so short as in the specimen figured in Flor. Pat., plate xxiii, but sometimes it is elongated, attaining a length of about 1 dm. or still more.

In my work die Gefässpflanzen der Magellansländer, p. 132, a mistake has been made, to which I may be allowed to call attention. Under *Verbena tridens* Lag. I cite; "Phil. Plant. Nuev. Chil.," etc., adding from inadvertence: ("Sub. nom. Verbenæ tridactylitis.") The last clause is incorrect and should be struck out. D.

P. 690:

V. UNIFLORA Phil. var. GLABRIUSCULA Ok.

Should be struck out, being, according to F. Kurtz, Collect. Flor. Argent., p. 249, identical with *Benthamiella patagonica* Speg. The species itself represents, according to Briquet in Engler und Prantl, die nat. Pflanzenfam. Beiträge, II, p. 66, the type of a new section *Pauciflorœ* of the gen. *Verbena*. (This view will retain it in *Verbena*. G. M.)

Add Macl., p. 690, line 12 from foot, the species:

30. V. BERTERII Schauer.

Hoary procumbent undershrub, with 4-cornered branches, and pinnatifid or trifid leaves, attenuate to the petiole; segments linear-lanceolate, acute, edges revolute. Spikes many-flowered, capitate; bracts linear-lanceolate, one-third shorter than the calyx. Appendages of dorsal anther scarcely exsert. Corolla pubescent.

Chili; N. Patagon., near Rio Negro (fide G. Hieronymus).

P. 684:

V. BONARIENSIS Rendle.

Suffruticose, apparently diffuse; young branches hairy. Leaves sessile, small, trisect almost to base, hispidulous; segments linear-oblong, obtuse. Flowers 6, sessile, crowded terminally on the branches, with small bracts, the lower ovate, obtuse, the upper lanceolate.

Calyx-tube long-cylindrical, 5-costate, 5-toothed, the teeth triangular, acute. Corolla lilac, the tube slender, but inflated upwards and subrecurved, hairy. Limbs spreading, subequal, emarginate at apex. Filaments short, anterior anthers small, included; posterior yellow and showy. Style as long as the tube, clavate, subentire.

Slopes of Mt. Buenos Aires.

Add Macl., p. 685:

31. V. CHUBUTENSIS Speg.—Spegazzini, Nov. Add. Flor. Patag., II, p. 68.

Mid-Patagonia, Chubut.

V. CRITHMIFOLIA Gill. et Hook.

Erect scabrid herb, with fleshy leaves, bipinnatifid, the segments linear obtuse, channeled, margin revolute; spike oblong, dense, bracts linear; calyx ovate-oblong, its teeth rather obtuse; corolla twice as long.

According to Spegazzini, Nov. Add. Flor. Patag., p. 72, occurring in N. Patagonia, between Rio Colorado and Rio Negro.

VERBENA CRITHMIFOLIA Gill. et Hook. var. LATILOBA Speg.—Spegazzini, Nov. Add. Flor. Patag., p. 73.

N. Patagonia, at the confluence of Rio Limay and Rio Neuquen.

34. V. FLAVA Gill. et Hook.

Stems basi-procumbent; leaves linear-lanceolate, entire and pinnatifid glabrous, segments few, linear, trifid, and entire. Flowers laxly spicate, calyx elongate, pubescent, teeth unequal; bracts minute. Corolla yellow inside.

Andes of Mendoza.

P. 690:

V. FLAVA Gill. et Hook. var. LATILOBA Speg.—Spegazzini, Nov. Add. Flor. Patag., p. 72.

Mid-Patagonia, Chubut, in the pre-andine district.

In his paper Plantæ Patagonicæ Australis, p. 561, Spegazzini described *Verbena aurantiaca* Speg., as an independent species. Later, in his work, Nov. Add. Flor. Patag., p. 72, he accentuates the great accordance between that species and the *V. flava* var. *latiloba*, being of the opinion that *Verbena aurantiaca* Speg. represents, perhaps, only a form of *Verbena flava* Gill. et Hook. var. *latiloba* Speg.

V. FLAVA Gill. et Hook. var. ANGUSTILOBA Speg.—Spegazzini, Nov. Add. Flor. Patag., p. 73.

N. Patagonia, near Carmen de Patagones.

V. GRACILESCENS Cham.—Grisebach, Symb. Flor. Argent., No. 1739.

N. Patagonia, Rio Colorado and Rio Negro, near Carmen de Patagones.

V. MULINOIDES Speg.—Spegazzini, Nov. Add. Flor. Patag., II, p. 70.

Mid-Patagonia, Caleta Porfirio (on the coast) and along Rio Chubut.

LIPPIA L.

P. 691:

L. FOLIOLOSA Phil.

Should be deleted, being identical with *L. seriphioides* A. Gray.

L. JUNCEA Schauer.

Should be removed to the genus *Baillonia*.

L. LYCIOIDES Steud.

Syn. *Verbena ligustrina* Lag.

P. 692:

L. SERIPHIOÏDES A. Gray.

Syn. *Lippia foliolosa* Phil.

Description under *L. foliolosa*. (Macl., p. 691.)

This species is common in Patagonia from Rio Colorado at least to Rio Sta. Cruz and its range extends probably still further to the south, perhaps to Rio Gallegos. It occurs most frequently in the coast district and in the river valleys, but is rare or lacking in the western district near the forest. I have seen or collected the species at the following localities: East coast, at Puerto San José, Puerto Madryn, Puerto Camarones, Puerto Mazaredo, Puerto San Julian and Puerto Sta. Cruz; in the interior, at several places in the lower and middle valley of Rio Sta. Cruz, at Lago Argentino [Casa Ortiz, Karr-aike], in the valley of Rio Leona, at Lago Viedma, at several places in the valley of Arroyo Scheuen, between Rio Sta. Cruz and Arroyo Scheuen, at Manantial de la Trompa.

An undershrub 1–2 dm. high, sometimes subdecumbent, often occurring abundantly, and covered by an extraordinarily great quantity of white, fragrant flowers, which completely hide the leaves and branches. D.

P. 692:

MONOPYRENA Speg.

According to Spegazzini, Nov. Add. Flor. Patag., II, p. 66, this genus should be merged in *Verbena*. Briquet, however, gives it in Engler and Prantl, *die nat. Pflanzenfam.*, *Nachtrach.*, II, p. 66, on account of its pyrenes not separating, a place as an independent genus and it may also here be so noted. To this genus belongs but a single species, viz., *Monopyrena serpyllifolia* Speg.—Macl., p. 693.

P. 694, after line 7, add the genera:

BAILLONIA Bocq.

Calyx campanulate or tubular, 4–5-toothed. Corolla 5-lobed. Drupe subsuccose. Shrubs or undershrubs, sometimes with rushlike branches;

spikes long and slender, or short and dense, with small bracts. Differs from *Verbena* in the 5-cleft corolla and the juicy fruit.

BAILLONIA JUNCEA (Miers) Bocq.

Syn. *Lippia juncea* Miers.

With rushlike stems; described in Fl. Pat., p. 691, no. 2.

Mid-Patagonia, in the pre-Andine district rather common; N. W. Patagonia, at Rio Reñihue.

NEOSPARTON Gris.

Leafless shrubs, with subglobular spikes, sessile at the nodes. Calyx tubular, 5-toothed; corolla 5-lobed. Drupes 2-winged, pyrenes, 2 or abortively one, and 1-seeded.

N. DARWINII B. & H.

Bracts broad-ovate, equalling the calyx, or longer. Stamens slightly exsert. Seeds with endosperm (? when ripe).

S. Patagonia, between Rio Deseado and Puerto San Julian.

P. 693:

RHAPHITHAMNUS CYANOCARPUS Miers.

(*Citharexylon cyanocarpus* H. & A.)

Evergreen tree; with branches compressed at nodes, and long, slender, orange spines. Leaves arising below the spines, orbicular-ovate, obtuse or subacute, coriaceous, glabrous with revolute margins, sparse dots, and short petioles. Flowers solitary, pendulous from mid of spines, or 3–4 from axils. Drupes globose, blue.

S. Chili; northern part of west Patagonia; Guaitecas Is., Rio Reñihue, Rio Puelo, Rio Palena; Mid-Patagonia, in the Andine woods.

Delete *R. parvifolius* Miers, which is only a synonym of the preceding.

Fam. 98. LABIATÆ.—Macl., p. 694.

CRUZIA Phil.

P. 696:

C. SERPHYLLACEA Phil.

Should be eliminated, being undoubtedly identical with *Scutellaria* /CE.

nummulariæfolia Hook. fil., an opinion already expressed by Spegazzini in Plant. Patag. Austral., p. 564.

STACHYS L.

Add Macl., p. 696:

S. ARVENSIS Linn.

Hairy; leaves petioled, cordate-ovate, obtuse, crenate; whorls 4–6-flowered, distant; corolla (purplish), scarcely longer than the unarmed calyx.

Europe, N. Patagon., Territory of Neuquen.

HEDEOMA Pers.

P. 697:

H. MULTIFLORA Benth.

It is uncertain if the range of this species extends to or over N. Patagonia. The plant is not mentioned as occurring in Patagonia either by Spegazzini, or by Lorentz and Niederlein, or by Hieronymus.

probabl not

SATUREIA L.

P. 697:

S. DARWINII Benth.

Pampas Tea; stimulating to the kidneys (Skottsberg).

Common in the steppe district and in the river valleys of S. Patagonia; near Rio Fósiles at the height of about 1,000 m.; in N. Fuegia rare.

P. 698:

S. PUSILLA Phil.

Should be deleted, being identical with the foregoing.

P. 698, 4 lines from foot, insert genus:

MENTHA Tourn. Mint.

Calyx nearly equally 5-toothed, and corolla nearly equally 4-cleft; stamens 4, equal; odorous herbs, with purplish or whitish flowers in axillary clusters or spikes.

1. M. ROTUNDIFOLIA Linn.

Plant hairy, soft downy; leaves subsessile, round-ovate, subcordate, rugose, crenate-toothed. Spikes slender, leafless, not hoary.

N. America; introduced in N. Patagon., at Rio Negro, near Carmen de Patagones (fide Spegazzini).

2. MENTHA VIRIDIS L., crossed by M. AQUATICA L.

Syn. *M. piperita* (L.p.p.) Huds.

Flowers pedicellate, and leaves petioled. Glabrous and pungent-tasted. Spikes narrow and loose. Leaves ovate-oblong, or narrower, acute, sharply serrate.

Introduced; in S. Patagon., at Rio Sta. Cruz (Speg.).

Fam. 99. SOLANACEÆ.—Macl., p. 698.

LYCIUM Linn.

P. 701:

L. CAPILLARE Miers.

As far as I am aware, not found in our district. D.

L. CHUBUTENSE Dus.

Should be deleted, being identical with *L. floribundum* Dun.

L. DURISPINA Dus.

Should be deleted, being identical with *Grabowskia ameghinoi* Speg. (infra, p. 232).

P. 703:

L. PUBESCENS Miers.

As far as I am aware, not belonging to the flora of our district.

P. 704:

L. WILKESII Ball.

Should be eliminated; not known from Patagonia.

P. 704, add at foot of page, the species:

17. L. FLORIBUNDUM Dun.

Syn. *L. chubutense* Dus.

Shrub, with simple and glandular hairs mixed; spiny, branches linear-striate, whitish-yellow. Leaves alternate or fascicled, small, obovate, or spathulate-oblong, cinereous. Flowers 1–3 from the center of the fascicles, close in the branches; calyx with linear hirsute segments as long as the corolla tube. Corolla funnelform, 5-partite, the segments obtuse, spreading. Stigma just exceeding the stamens.

Chili; N. Patagonia, common along Rio Negro; Mid-Patagon., along the coast-district.

18. L. HALOPHILUM Speg.

N. Patag., at the margin of saline swamps near Carmen de Patagones.

19. L. LASIOPETALUM Speg.

Mid-Patagonia, Chubut.

20. L. REPENS Speg.

Collected by Barnum Brown in Patagonia.

N. B. These are but some notes on Macloskie's representation of this genus. A careful examination of the Patagonian species will probably cause a reduction of their number. D.

SOLANUM L.

P. 706:

S. COMMERSONII Dun.

Should be deleted, not being known from our district.

S. MARITIMUM Meyen.

Occurs in N. Patag., at confluence of Rio Limay and Rio Neuquen.

S. NIGRUM L.

The typical form was found by me in a burnt steppe near Lago San Martin. D.

P. 707:

S. TUBEROSUM L. var. MAGLIA (Mol.).

According to Spegazzini, occurring in Mid-Patagonia along Rio Carrenleofú.

Chilian Andes, N. Patagon., by Lago Nahuel-huapi.

P. 707, add after line 11 from foot, the species:

S. ATRIPLICIFOLIUM Gill.

Herbs branching, pulverulent-hairy, stem angled, leaves obovate, subcordate, acute, toothed; racemes hirsute, the peduncles longer than the pedicels.

SALPICHROA Miers.

P. 707:

S. RHOMBOIDEA Miers.

According to v. Wettstein in Engler und Prantl, die Nat. Pflanzenfam., IV, 3 *b*, p. 25, this species occurs from S. Brazil to the southernmost point of America. Macloskie notes Brazil, N. Patagonia, Magellan. Excepting this I have not found in the literature any statement about the occurrence of this plant either in Patagonia or in Magellan. The statement by v. Wettstein and Macloskie of the occurrence of this species in Magellan is, I think, a mistake. It is very questionable if this plant occurs even in the northern part of our district. D.

P. 708:

JABOROSA Juss

J. MAGELLANICA (Gris.) Benth & Hook.

Occurs in S. Patagon., in upper valley of Rio Sta. Cruz, near Laguna Tar; in valley of Arroyo Scheuen, at several localities.

J. RUNCINATA Lam.

Is not Patagonian, and should be deleted.

P. 708: Add the species:

3. J. AMEGHINOI (Speg.).

Syn. *Himeranthus ameghinoi* Speg.

Napiform rhizome, branches short, decumbent, hoary upwards. Leaves crowded, rather fleshy and cobwebby, broad-ovate to subhastate, entire or toothed-mucronulate, obtuse, the petioles long and hoary. Flowers glomerate, short-stalked. Calyx 5-partite, lobes subacute, hoary. Corolla broad-campanulate, purple-fuscous, pulverulent, with short lobes, which are obtuse and mucronate. Stamens adnate midway in the tube. Berry globular, glabrous, with little juice.

S. Patagonia, on dry rocks by Rio Chico.

4. J. BERGII Hieron.

Marked by its berry with accrescent calyx, and its densely pectinate-laciniate leaves.

N. Patagonia, in the district near mouth of Rio Negro.

5. J. DESIDERATA Speg.

Branches slender, glabrous, and leaves somewhat crowded, ovate, 5–7-partite, glabrous. Flowers cernuous, often a few crowded at the axils; bracts spathulate-linear, entire or toothed. Calyx 5-cleft, the lobes triangular and acute. Corolla glabrous, whitish-green, with cylindric tube, and lobes becoming refract, linear-subulate, involute, a third shorter than the tube, acute. Stamens and ovary glabrous. Berry?

S. Patagonia, near Rio Deseado.

6. J. MAGELLANICA.

Killik-aike. (Skottsbg.)

P. 708, also add the genus:

TRECHONÆTES Miers.

Low herb, with thick roots, pinnatifid leaves, and axillary peduncles; having corolla broad-campanulate, its border 7-lobed; filaments inserted near the base of the tube, and attached to the back of the anthers.

T. LACINIATA Miers.

With yellow, red-veined corolla.

Chili; N. Patagonia, at the confluence of Rio Limay and Rio Negro.

PANTACANTHA Speg.

Calyx tubular, 5-partite, the lobes long, spinescent, revolute. Corolla tubular and regular, its lobes small, mucronate-spinulose. Stamens included, inserted in lower half of tube, filaments long. Anthers erect, oblong, introrse. Disk not evident. Ovary 2-celled, style filiform, stigma slightly 2-lobed. Ovules few. Capsule oblong, acutish, septicidally 2-valved, the valves 2-cleft. Seeds angular, subreniform, laterally compressed, wing-crested. Embryo curved round, small endosperm, with terete, superior radicle.

P. AMEGHINOI Speg.

Perennial with long angular branches, and large leaves; primary leaves sagittate, linear, rigid, long, spinescent. Secondary leaves fasciculate in the axils of the primaries, mucronate-spinose. Flowers terminal on the branches, mostly sessile and solitary. Calyx-lobes thrice as long as the tube. Corolla glabrous, its tube little exceeding the calyx-lobes. Corolla lobes reflexed; stamens hairy below; style not exsert. Capsule shorter than the calyx-lobes. Seeds glabrous, reddish-brown.

Patagonia, by Lago Musters; Rio Chico.

FABIANA Ruiz et Pav.

P. 709:

F. HIERONIMI Nied.

Is not Patagonian and should be deleted.

P. 710, line 4, insert:

5. F. GLANDULOSA Dus.—Dusén, Neue und Seltene Gefässpfl., p. 34. Taf. 5, Fig. 3–4. Taf. 8, Fig. 32.

Fruticulus dense ramosus, c. 1.0 dm. altus; rami inferne nudi, c. 2.0–3.0 mm. crassi: ramuli ex axilla foliorum oriundi, pilis brevibus glanduliferis remote vestiti, inferne saltem striati, verisimiliter in sicco tantum, virides; folia inferiora parva, interdum vix 1.0 mm. longa, cetera 3.0–8.0 mm. longa et 0.5 mm. lata, remota, carnosa, glaberrima, apice rotundata, inferne angustata, sicca irregulaliter rugosa, nervis inconspicuis, foliolis fasciculatis in axillis dispositis; pedunculi graciles, pseudolaterales, ebracteati, remote et breviter glanduloso-pilosi, c. 7.0 mm. longi; flores solitarii, erecti; calyx cylindricus, c. 10.0 mm. longus et 3.5–4.0 mm. diam., remote glanduloso-pilosus, ad ⅓ longitudinis vel ultra 5-lobatus, lobis linearibus, apice rotundatis vel acuminatis, inæquilongis, subrecurvatis; corolla sordide albo-flavescens, tubo c. 17.0 mm. longa, jam infra os calycinum ampliato, sursum cylindrico, c. 3.5 mm. diam., remote glanduloso-piloso, limbo plano, patentissimo, 5-lobato, lobis apice elongate attenuatis, paullo recurvatis; stamina fere ad basin tubi inserta, ad os tubi producta; pistillum staminibus subbrevius, stigmate hemisphærico.

S. Patagonia, in dry steppe near Richmond, not very far from Sta. Cruz Emporium.

Densely branched undershrub, about 1 dm. high; branchlets axillary, green, thinly covered with shortly-stalked glands; lower leaves small, scarcely 1 mm. long, upper ones 3–8 mm. long and about 5 mm. broad, remote, fleshy, glabrous, rounded at point, somewhat attenuate below, rugose when dry, with inconspicuous nerves; small fasciculate leaves (narrow branchlets) in the axils; peduncles subtile, pseudolaterals, without bracts, remotely covered with shortly-stalked glands; flowers solitary, erect; calyx cylindrical, remotely glandulous, 5-lobed in upper third, the lobes being recurved and of different length, rounded or acuminate at point; corolla whitish yellow, ampliated already below the mouth of the

calyx, upwards cylindrical, remotely glandulous, the limb rotate, 5-lobed, the lobes being elongate-attenuate at point and somewhat recurved; stamens inserted at the base of the corolla, reaching nearly to its mouth; style somewhat shorter than the stamens with semiglobose stigma.

Stands nearest to *F. viscosa* Hook., differing from that species in having larger flowers, with a cylindrical tube and rotate limb. *F. viscosa* is very viscid, *F. glandulosa* scarcely.

P. 709:

F. PATAGONICA Speg.

Common in the Patagonian steppe and in the river valleys from Rio Negro to Rio Sta. Cruz at least; in Neuquen Territory.

A highly variable plant. Spegazzini notes in his paper, Nov. Add. Flor. Patag., II, p. 54, the following varieties: *typica*, *foliosa*, *nana*, *brachyloba* and *gracilis*, being all established by him.

Add to *Solanaceæ*, p. 713, line 13:

DATURA Linn.

Rank poisonous weeds, with funnelform corolla, having long tube and plaited border. Calyx prismatic, 5-toothed, and capsule prickly, partly 4-celled.

D. STRAMONIUM L. (Jamestown-weed of U. S.)

Annual, glabrous; leaves ovate, sinuous-toothed; stem green; corolla white.

In N. Patagonia, Carmen de Patagones.

PETUNIA Juss.

P. 710:

P. AXILLARIS Lam.

As far as I am aware, not found in our district. D.

P. HUMIFUSA Dun.

Should be deleted, not known from Patagonia.

Spegazzini's statement in Plant. Patag. Aust., p. 557, of the occurrence of this species in Patagonia is a mistake corrected by himself in Nov. Add. Flor. Patag., II, p. 56, where the plant in question is described as *Nicotiana acaulis* Speg.

P. 711, after line 4, add the species:

3. Petunia parviflora Juss.

Prostrate annual herb, with many stems from the root, green white, long branches. Leaves oblong-spathulate, or oblong-linear, basi-attenuate, subsessile. Flowers short-peduncled, axillary, or opposite the leaves, or terminal. Calyx segments basi-attenuate, spathulate, obtuse, spreading. Corolla funnel-form, scarcely larger than the calyx.

Mexico; Brazil; Mid-Patagonia, Puerto Madryn.

NIEREMBERGIA Ruiz et Pav.

P. 711:

N. hippomanica Miers.

As far as I know, not found in our district. D.

N. patagonica Speg.

S. Patagonia, not rare in the steppe; found by me at Richmond (not far from Sta. Cruz Emporium), in the central part of the Sta. Cruz Territory, in the upper valley of Rio Sta. Cruz, near Lago Argentino, in the valley of Rio Leona, at Lago Viedma, in the mountains between Lago Viedma and Laguna Tar, near Lago San Martin, between Arroyo Scheuen and Rio Sta. Cruz at Manantias de la Trompa and in the valley of Arroyo Scheuen. D.

BENTHAMIELLA Speg.

P. 712: Add after line 13:

6. B. azorelloides Speg.—Spegazzini, Nov. Add. Flor. Patag., II, p. 53.

Mid-Patagonia, between Lago Musters and Colu-huapi.

7. B. montana Dus.—Dusén, *Neue und Seltene Gefässpfl.*, p. 35, Taf. 4, Fig. 3, and Taf. 8, Fig. 33–35.

Fruticulus dense pulvinatus, pulvinulis fere, subhemisphæricis, ad 2.5 dm. usque diam., radice robusta, superne, 1.0–2.0 cm. crassa; rami 1.0–1.5 dm. longi, dichotome ramosi, apice fasciculatim ramulosi, ramulis fastigiatis, superne dense imbricatim foliosis, deorsum foliis emortuis dense vestitis; folia parva, linearia, 6.0–7.0 mm. longa, c. 1.0 mm. lata, fere ad apicem subcanaliculata, carnosa, apice crassiora, basi membranacea, subhyalina, ceterum viridia, truncata, integerrima, glaberrima, marginibus pectinatim ciliatis, costa media crassa, in facie inferiore foliorum carinam efformante; flores in axillis foliorum superiorum solitarii, folia vix superantes, fere sessiles vel in pedicellis 1.0–2.0 mm. longis dispositi, bracteis 4–6, c. 3.0 mm. longis, foliis simillimis cincti; calyx oblonge campanulatus, c. 3.0 mm. altus, circiter ad ⅓ longitudinis 5-lobatus, lobis linearibus, truncatis, marginibus ciliatis; corolla albo-flavescens, calyce c. triplo longiore, tubo sursum sensim ampliato, infundibuliformis, c. 7.0 mm. longa, glaberrima, 5-lobata, lobis brevibus, truncatis, longitudinaliter depresse uni-plicatis; stamina c. 2.0 mm. supra basin corollæ inserta, inæquilonga, brevissimum paullulo supra medium tubum, longissimum fere ad faucem corollinam producta; stigmate subhemisphærico; capsula globosa, bilocularis; semina singula in quoque loculo, subreniformia, atro-brunnea, c. 1.4 mm. longa et 1.0 mm. lata.

S. Patagonia, on the mountains near Rio Fósiles (about 1,100 m.),

Low, densely branching, cæspitose shrub, about 1–1.5 dm. high and 2.5 dm. in diam.; root robust; branches below dichotomous, upwards with fasciculate branchlets, covered above with densely imbricating leaves, below with dead ones; leaves small, linear, nearly in their whole length subcanaliculate, green, truncate, entire, glabrous, pectinate-ciliate at margin, dorsally costate-carinate, flowers solitary in the upper axils, scarcely exceeding the leaves, nearly sessile or with very short pedicels; bracts 4–6, like the leaves, but only half as long; calyx oblong-campanulate, 5-lobed, the lobes about a third of the calyx truncate, with ciliated margins; corolla whitish yellow, about three times longer than the calyx, the tube gradually ampliate, glabrous, 5-lobed, lobes short, truncate, with a longitudinal depressed fold; stamens affixed above the base of the tube, not exceeding the corolla and of different length; stigma subhemispherical, capsule globular, 2-celled; seeds solitary in the cells, subreniform.

Nearest to *B. patagonica* Speg., differing in the strait, glabrous, pectinate-ciliated leaves, more numerous bracts and less deeply lobed calyx.

B. PYCNOPHYLLOIDES Speg.

Is *Saccardophytum pycnophylloides;* fide Dusén and Skottsberg.

P. 713, after line 13, add the genus:

GRABOWSKIA Schlecht.

Shrubs with drupaceous, scarcely fleshy fruit; the endocarp indurate, of 2 hemispherical pyrenes, which may or may not be excavate, 1–2-

celled, the cells 1–3-seeded; testa of seeds thin, fuscous; embryo very curved, cotyledons semi-terete, radicle inferior; *Pseudolycium* when 1-celled and 2-seeded. Thorny shrubs, with axillary or racemed, violet-green flowers.

1. GRABOWSKIA AMEGHINOI (Speg.) Speg.

Syn. *Lycium durispina* Dusén.

Drupe globose, slightly accrescent, and often covered by the dry persistent corolla, glabrous (3–4 mm. diam.) ruddy; pyrenes semilenticular, convex dorsally; smooth, not sulcate; base rounded, not excavate, nor pervious.

Over all Mid and N. W. Patagonia, by Rio Chubut, etc.

2. G. MEGALOSPERMA Speg.

Pseudolycium; a shrub a meter high or more. Branches spiniform, spreading, strong. Leaves fasciculate, somewhat fleshy, obovate, oblanceolate, obtuse, cuneate-petiolate. Flowers rather large, often solitary on acrogenous spines; pedicels slender, not longer than the calyx, which is campanulate, with obtuse, ovate lobes. Corolla white-livid, twice as long as calyx, lobes acute. Drupe large, fuscous purple, with accrescent calyx.

Patagon., by Golfo de San Jorge; in dry rocky places.

3. G. SPEGAZZINII Dus.—Dusén, Neue und Selt. Gefässpfl., p. 33, Taf. 4, Fig. 2, and Taf. 8, Fig. 28–31.

Frutex decumbens, espinosus, radice verticali, longissima, robusta, superne ad 3.0 cm. usque crassa, apice ramos plurimos emittente; rami robusti, ad 30 cm. usque longi, horizontales, flexuosi, ad terram appressi, cortice griseo, rimuloso obtecti, ramulosi, ramulis tuberculosis, robustis; folia in tuberculis fasciculatim congesta, parva, glabra, carnosula, paullulum concava vel canaliculata, polymorpha, lanceolata, oblanceolata, ovali-oblonga vel interdum cuneata, 1.0–3.0 mm. longa, epetiolata, nervis inconspicuis; flores parvi, brevissime pedunculati, solitarii bini vel in fasciculis foliorum dispositis; calyx glaberrimus, campanulatus, ad medium 4-lobatus, lobis triangularibus, acutis, marginibus ciliolatis; corolla pallide flava, calyce circiter triplo longiora, obconica, 4-lobata, lobis revolutis, deplanatis semiorbicularibus; stamina subexserta; pistillum corolla subbreviore, stigmate hemisphærico; drupa fere sphærica, miniata, glaberrima, seminibus binis, plano-convexis, ambitu late ovatis, glaberrimis.

S. Patagonia, on saline clay in the valleys of Rio Sta. Cruz and Arroyo Scheuen.

SACCARDOPHYTUM Speg.

Calyx 5-merous, tubulo-campanulate. Corolla cylindric, obconical; margin open, with 5 weakly imbricate obtuse lobes. Stamens 2, arising near base of tube, protruding. Disk 0. Ovary outer angle. Stigma 3-lobed. Cæspitose, with small scale-like leaves; small flowers, sessile apically.

S. PYCNOPHYLLOIDES (Speg.).

Described as *Benthamiella pycnophylloides* in Macl., p. 713.

S. Patagonia, on Rio Scheuen.

The generic position is not cleared up.

Cf. Engler und Prantl, die Nat. Pflanzenfam., Ergänzungsheft, II, p. 310.

Decumbent, unarmed shrub with a robust, long, vertical trunk-root, sending out many horizontal branches, generally about 30 cm. long, flexuose, densely and intricately branching, branchlets robust, tuberculiferous; leaves fasciculate in the tubercles, small, glabrous, fleshy, subconcave or subcanaliculate, polymorphous, lanceolate, oblanceolate, ovate-oblong or sometimes cuneate, about 1–3 mm. long, sessile and with inconspicuous nerves; flowers small, shortly pediceled, solitary or two together in the leaf-fascicles; calyx campanulate, glabrous, divided to the middle in 4 triangular lobes, ciliated at its margins; corolla pale yellow, about three times longer than the calyx, obconic, 4-lobed, with revolute lobes being semiorbicular when spread out; stamens subexsert; style somewhat shorter than the corolla; berry nearly globular, miniate.

Differing from the other species of this genus in its unarmed, depressed branches.

Add to *Solanaceæ*, p. 713:

NICOTIANA Tourn. Tobacco.

Calyx tubular bell-shaped, 5-cleft, enclosing the ripe capsule. Corolla funnelform, with a long tube. Capsule 2–4-valved. Leaves entire, clammy, seeds numerous, small.

1. N. ACAULIS Speg.

Syn. *Petunia humifusa*, described p. 710, no. 2.

S. Patagon., Monte Leon near Rio Sta. Cruz; Mid-Patagon., along Rio Chubut.

2. NICOTIANA ACUMINATA Graham.

Perennial herb, hairy, with leaves broad-lanceolate, acuminate, undulate, entire, petiolate, sometimes cordate. Panicles few-flowered, calyx glandular-hairy, membranaceous, scarious, 5-nerved, the segments narrow, unequal. Corolla limb long, enlarging upwards, 5-cleft; segments round obtuse, 7 cm. long.

Chili; Mid-Patagonia, in Chubut Territory.

3. N. ALPINA Poepp.

Syn. *Collomia patagonica* Speg., *Nicotiana monticola* DC.

Erect simple stem, viscous above; radical leaves long-petioled, oblong, repand, alternate, obtuse; cauline leaves shorter, acuminate, the uppermost linear. Flowers racemose, subspicate. Calyx deeply 5-cleft, the segments narrow, 2 larger, corolla salver-shaped; its tube exceeding the calyx, inflated cylindric; limb short, 5-partite. Annual herb.

Chilian Mts. (not alpine); according to Spegazzini, it is not rare, but occurs over nearly all Patagonia; was found by Dusén on sandy ground near the Sta. Cruz Emporium, in burnt steppe along Rio Sta. Cruz, and in the upper valley of that river.

4. N. AMEGHINOI Speg.

S. Patagonia, near Lago Argentino, along Rio Sta. Cruz, and between Puerto San Julian and Rio Deseado. Spegazzini thinks it may be only a variety of *N. alpina* Poepp.

5. N. DESERTICOLA Speg.

S. Patag., Golfo de San Jorge.

6. N. PAUCIFLORA Remy.

Stem strict, simple, hairy, terete. Leaves petiolate, the lower ovate, acutish, the upper narrow linear, all hairy. Flowers few, 2–7, large, pedunculate, Calyx campanulate, as long as the peduncle, teeth long, linear, obtuse, unequal, hirsute. Corolla-tube large, 6–7 times as long as the calyx, lobes obtuse.

Coquimbo, N. Patagonia, Neuquen, Territory of Pilaipunico.

7. N. SCAPIGERA Phil.

Soft pubescent annual. Leaves radical, oblong, obtuse, attenuate to a shorter (16 mm.) petiole; peduncles radical, twice as long as leaves;

4-flowered, rough, glutinous upwards. Bracts linear, the lower twice as long as the (11 mm.) flowers; the upper shorter. Pedicels very short. Calyx bracteate at base; its segments linear, then triangular. Corolla twice as long as calyx, tubular, with rounded lobes. Capsule as long as calyx.

S. Patagonia, burnt steppe near Rio Sta. Cruz.

Fam. 100. SCROPHULARIACEÆ.—Macl., p. 713.

CALCEOLARIA L.

P. 716:

C. BIFLORA Lam.

Is also found at Cape Fairweather.

C. DARWINII Benth.

Has large flowers, and subtriangular lower lip. But the plant is *C. patagonica* Kränz. (fide Kränzlin).

P. 719. Add after line 4 the species:

14. C. FALKLANDICA (Moore) Kränzl.

Stem prostrate; leaves 3 all basilar, pairs, oblong to lance-oblong, narrowing to a petiole, dentate, leaf and petiole 10 cm. Scapes axillary, 25 cm., glandular-hairy above. Corymbs 4–6-flowered; calyx-segments short ovate. Upper lip of corolla hooded; lower elongated, with narrow base, suddenly widening, elegantly purple-spotted in the base.

Falkland Is. (Nicholl).

P. 717. *Calceolaria fothergilli* Sol. occurs in N. Patagon., at Port St. Gregory and Port Famine.

P. 717. *Calceolaria lanceolata* Cav. occurs also in N. Patagon. at Lago Nahuel-huapi.

P. 717. *Calceolaria nudicaulis* Benth. differs from its congeners in the black-pitted corolla, from *C. biflora* in its strict scapes, more slender and branching, and its smaller and more numerous flowers. (Kränzlin.)

P. 718. *Calceolaria polyrrhiza* Cav. includes *C. palænæ* Phil., and is found at Rio Palena.

C. palænæ is to be deleted, as a synonym of *C. polyrrhiza* Cav.

15. CALCEOLARIA PRICHARDII (Rendle) Kränzlin (*Fagelia prichardii* Rendle).

Undershrub, branching subterraneously, stems 3–7 cm., purplish. Leaves widening from the petiole to an oblong or lance-oblong lamina, crenate or ciliate-denticulate. Flowers solitary in axils, pedicels 12 cm.; calyx-segments broad, 5 mm. long; upper corolla-lip broad cucullate, not equalling the calyx; under lip first descending, then ascending, broadly ovate and saccate; yellow with purple dots.

S. Patagonia, Burmeister Id., near Lago Argentino.

16. C. TENELLA Poep. et Endl.

Small, long creeping, with many intricately woven branches. Leaves nearly sessile, broad-ovate, 1 cm. long, and smaller, few-toothed. Flowering stems to 10 cm., ascending, mostly with a pair of leaves midway. Calyx-segments oblong-obtuse, glandular hairy. Upper corolla-lip cucullate, exceeding the calyx, rounded; lower lip much obovate, inflated at the open middle; corolla yellow, small; stamens very short and concealed under the upper lip.

Chili, N. W. Patagon., by Rio Aysen (Dusén). Rio Reñihue, Rio Manso.

P. 719, continued additions after line 4:

I am indebted to Prof. Dr. Fr. Kränzlin for the following descriptions of two new species. D.

18. C. PATAGONICA Kränzl. n. sp.

(*Scaposæ* ser. 2 *Plantagineæ.*)

Rhizoma oblique repens polyrrhizum in solo ramosum. Caules breves, ut videtur longævi, rudimentis petiolorum vetustiorum instructi, supra paucifoliati, 3–4 cm. longi. Folia viva coætanea in quoque ramulo 2-paria valde approximata spathulata, oblonga obtusa margine omnino integra in petiolum brevem sensim angustata, maxima 4 cm. longa 1–1.2 cm. lata sæpius multo minora, supra glabra, subtus in venis tantum densius pilosa. Scapi solitarii 10 cm. alti plus minus rubelli sparse et supra tantum paullum densius pilosi, aphylli, racemi dichasiales, pauciflori (.3–5), pedicelli longitudine valde diversi, ille floris centralis 2 cm. et ultra longus, illi lateralium multo breviores, omnes ut etiam calyces extus dense glanduloso-pilosi. Calycis segmenta late oblonga, superius minus, lateralia majora,

inferius paullo majus et apice profunde bifidum (!). Corollæ labium superius cucullatum indivisum calyce brevius, labium inferius toto ambitu latissime obovatum, suborbiculare, leviter incurvum medium fere usque apertum, orificium triangulum, lobus inflexus angustissimus, corolla minutissime papillosa vix pilosa dicenda; stamina perbrevia labium breve superius vix excedentia; antheræ magnæ loculi separati. Corolla intense aurea, 1.3–1.5 cm. longa et fere lata.

S. Patagonia, in the steppe. (Leg. O. A. Peterson.)

Proxima *C. lorentzii* Gris., differt tamen ab illa inflorescentia, foliis et statura. Differt porro ab omnibus hujus sectionis et a permultis Calceolariis calyce exacte pentamero, sub N. 33 (post *C. lorentzii*) monographiæ nostræ adnumeranda est. (Fr. Kränzlin.)

Stem short, every branch with two very approximate leaf-pairs; leaves spathulate-oblong, obtuse, generally entire, attenuate to a short petiole, glabrous on the upper side, pilose on the nerves of the underside; scapes solitary, more or less reddish, only upwards slightly pilose, leafless; racemes dichaseous, few-flowered, with pedicels of very different length and, as well as the calyx, glandular-pilose; the calyx segments broad-oblong, the upper one small, the laterals greater, the lower still greater and deeply bifid; corolla yellow, minutely papillous; upper lip cucullate, entire, shorter than the calyx, lower broad-obovate, suborbicular, slightly incurved, open to beyond the middle, with triangular opening; stamens very short, scarcely exceeding the lip; anthers great with separated cells.

17. C. LAGUNÆ BLANCÆ Kränzl. n. sp.

(*Scaposæ* ser. 2 *Plantagineæ.*)

Rhizoma repens crasse radicosum cæspitificum pluriramosum. Caules brevissimi paucifoliati. Folia dense congesta, paria 2 vel 3 valde approximata, e petiolo brevi sensim in laminam oblongam vel oblongo-lanceolatam dilatata, maxima ad 3 cm. longa, vix 1 cm. lata, supra et subtus minute pilosa, in nervis vix densius. Scapi tenues omnino aphylli ad 10 cm. alti; racemi pauciflori, dichasiales; bracteæ minutæ, oblongæ. Calcyis segmenta late oblonga obtusa vel imo fere orbicularia. Corollæ labium superius quam calyx duplo fere longius cucullatum; labium inferius obovatum obtusum leviter inflexum, medium fere usque apertum; lobus inflexus magnus antice (*i. e.*, in cucullo labii) papillis minutis semiglobosis obsitus. Stamina perbrevia in labio superiore abscondita; antheræ loculi contigui, tota corolla aurea, extus minute puberula, intus glabra, labium superius 2 mm. longum 4 latum, inferius 1 cm. longum, 5–6 cm. latum.—Exeunte Octobri.

Patagonia, Territorio del Chubut, valle de la Laguna Blanca (Koslowsky, N. 98).

Est planta elegantula typo potius chilensi quam argentino. Si folia essent angustiora et lanata, confundere possis cum *C. palenæ* Phil., cui magnitudine et habitu similis. Lobus inflexus labii inferioris major quam in plerisque speciebus est et in anteriore parte, altius in sacculum labelli decurrente, papillis onustus. Proxima certe *C. filicaulis* Clos non solum in declivitate occidentali Andium, sed etiam orientali versus fines reipublicæ Argentinæ obviæ. Differt ab illa specie præcipue corolla longiore quam lata, labio superiore calycem bene superante, limbo inflexo magno, ceterum foliis margine integro. Inserenda esset in monographia nostra sub N. 40 a post *C. filicaulem*. (Fr. Kränzlin.)

Stem short, few-leaved; leaves crowded, oblong or oblong-lanceolate, minutely pilose on both sides, attenuate to a short petiole; scapes tenuous, mostly leafless, in their whole length covered by papilliform hairs; racemes few-flowered, dichasial; bracts minute, oblong; the segments of the calyx broad-oblong, obtuse or the lowest nearly orbicular; corolla yellow, puberulous outside, glabrous inside with upper lip nearly twice as long as the calyx, cucullate; lower lip obovate, obtuse, subinflexed, open nearly to the middle; the inflexed lobe large, at the anterior part (viz., at the cucullate part of the lip) covered with minute hemispherical papillæ; stamens very short with parallel cells.

Add Macl., p. 719:

STEMODIA CHILENSIS Benth. Bot. Register.

Chili; N. Patagonia, Rio Negro near Carmen de Patagones (fide Spegazzini).

Erect, very viscous, hairy, the leaves oblong or lanceolate, acute, unequally serrate, basi-cordate, amplexicaul, auricled, the spike terminal, leafy, at length elongate, interrupted. Calyx-segments lanceolate-subulate, the corolla half as long again as the calyx, the lower lip glabrous. Perennial.

Chili.

P. 719:

LINARIA CANADENSIS (L.) Dum.

Is found in North Patagonia (fide J. Ball).

P. 720:

MONNIERA (BACOPA) AQUATICA Aubl.

Is a Brazilian plant, found according to Macloskie also in S. Patagonia, at Puerto Deseado; probably a mistake. D.

Add to this genus:

M. (BACOPA) FLAGELLARIS (Cham. et Schlecht.) O. Ktze.

N. Patagonia, Rio Negro, near Carmen de Patagones. Chili; South Brazil.

P. 720:

BRYODES MINUTISSIMA Phil.

A doubtful species which in my opinion should be deleted. Not described in the authorities. D.

MIMULUS L.

P. 721, line 8 from foot, add the species:

2. M. LUTEUS L.

Ascending or erect, with orbiculate ovate or oblong leaves; the lower subquadrate, the upper sessile, or cordate-amplexicaul. Peduncles exceeding the leaves. Calyx ovate, inflated in fruit, teeth ovate, the highest largest. Corolla large, twice as long as the calyx, yellow, with spots. Perennial.

California to S. Chili; Mid-Patagonia, Chubut Territory; W. Patagon., by Rio Aysen.

3. M. PARVIFLORUS Lindl.

Annual, with diffuse or ascending branching stem. Leaves erose-toothed, ovate or orbicular, the lower petiolate. Peduncles slender, upper ones exceeding the leaf. Calyx ovate, in fruit broad-campanulate, the teeth broad and short, the upper largest; corolla-tube half longer than calyx.

Chili; Mid-Patagonia, Chubut Territory at Rio Corcovado.

4. MIMULUS BRIDGESII (DC.) Clos.

Differs from *parviflorus* Lindl., in having the calyx-teeth very short, the highest scarcely larger, corolla longer.

S. Chili; Mid-Patagon.; along Rio Carren-leofú.

P. 722:

VERONICA ELLIPTICA Forst.

Syn. *V. decussata* Ait. var. *fonkii* Phil.

Occurs also in W. Patagonia northwards at least to Rio Aysen.

Procumbent or prostrate; leaves ovate-oblong, few-toothed, narrowing into the short petiole; pedicels solitary, twice as long as the leaves, bractless, rarely 1-bract. Outer calyx-segments ovate-oblong. Branches flagelliform. Perennial.

OURISIA Comm.

P. 725: Add 6 lines from foot of page:

O. ALPINA Poepp. & Endl.

Stems short, repent, leaves subradical, long-petioled, cordate-ovate to oblong, crenate. Floral leaves opposite, incise-toothed, cuneate. Scape short, raceme few-flowered, tube of corolla twice as long as calyx; corolla limb large. Leaves small, often narrow.

S. Chili, N. Patagon., Territory of Neuquen.

O. MICROPHYLLA Poepp. & Endl.

Glabrous. Leaves sessile, subimbricate, ovate, entire. Calyx-segments oblong, 3–4 times shorter than corolla. Stamens half shorter than tube. Leaves of floral branches quadrifariously imbricate, of sterile branches lax. Flowers rose-lilac. Plant cæspitose, branching, 5–7 cm. high.

S. Chili; N. Patagon., Territory of Neuquen.

O. RUELLOIDES (L.) Gaert.

Is found also in N. Patag., Territory of Neuquen.

O. PYGMÆA Phil.

Small, glabrous herbs, with filiform, creeping stem, and leaves very small, petiolate, broad-cordate, entire. Peduncles axillary, long, with 1 erect flower. Calyx-segments ovate-oblong, ciliate. Corolla-tube 4 mm., twice as long as calyx, its segments obcordate, as long as its tube.

N. Patagon., in mountains near Lago Nahuel-huapi.

O. UNIFLORA Phil.

Is found also in W. Patagonia, at Rio Barker.

P. 727:

EUPHRASIA L.

E. ANTARCTICA Benth.

Was also found by Rio Sta. Cruz by Barnum Brown (verified by Skottsberg); also at Magellan; Cabo Negro.

P. 727: Insert 3 species, viz.:

E. CHRYSANTHA Phil.

Scarcely puberulous; leaves thickish, 3–partite, the segments linear-lanceolate. Flowers large, yellow, subfasciculate at ends of branches. Calyx campanulate, 10 mm. long; corolla 22 mm. long, externally pubescent, entire, long; style exceeding stamens, as long as the upper lip.

N. Patag., Territory of Neuquen.

E. SUBEXSERTA Benth.

Stem glabrous; leaves thick, cuneate-trifid; lobes ovate or oblong, obtuse; spikes uninterrupted. Calyx campanulate, its lobes broad, obtuse. Corolla-tube, scarcely exsert, as long as the lips; lobes of corolla broad, emarginate; capsule acute.

Chili; N. Patagon., Territory of Neuquen (Spegazzini).

E. TRIFIDA Poepp.

Stem pubescent, leaves 3–partite, lobes narrow, acutish; spikes subinterrupted. Calyx tubular campanulate, lobes obtuse, short. Corolla-tube exsert, longer than the lobes of the lip. Capsule oblong, obtuse, submucronate. Leaves 4–8 mm. long, margin revolute, usually glabrous.

S. Chili; N. Patagon., by Lago Nahuel-huapi; N. W. Patagon., Rio Puelo, Rio Reñihue.

P. 727, 5 lines from foot of page, add genus of *Scrophulariaceæ.*

SCHIZANTHUS Ruiz et Pav.

Corolla irregularly bilabiate, and inverted by torsion of peduncle; the 2 upper segments are 3–4-lobed, lowest by torsion; the lowest segment is simple or 2-lobed, and is highest; the lateral segments are 4-lobed. Erect herbs with cymose flowers, and mostly pinnate leaves.

S. GRAHAMI Gill.

Leaves once or twice pinnatisect, the segments entire, or dentate-pinnatifid. Corolla-tube exceeding the calyx; mid segment of posterior abbreviated lip bifid, acuminate; lateral segments acute, shorter; mid segment of large anterior lip rhombic or lance-oblong, acuminate. Stamens briefly exserted. Flowers lilac or pink, with yellow sepals.

Chilian Andes; North Patagonia, near Trelope.

P. 727, add, 12 lines from foot, the genus:

ARGYLIA D. Don.

Erect herbs with spirally arranged, large, much divided leaves, the segments 1–2-pinnately parted. Sepals nearly distinct; corolla funnelform, with 5 spreading lobes. Thecæ of anthers not toothed.

And the three species:

A. BUSTILLOSII Phil.

Suffruticose, branching much at the base, the branches 7–10 cm. long, ending in a spine, glabrate. Leaves digitate; the 6–9 leaflets incised or pinnatifid; their lobes acute-mucronate. Flowers very large, solitary below the spines; calyx-margins ciliolate; corolla funnelform, 5 times as long as calyx.

N. Patagonia, Territory of Neuquen; Cordillera of Mendoza.

A. POTENTILLÆFOLIA DC.

Stem erect, leafy to mid, glabrous; leaflets 7, lanceolate-cuneate, coarsely inciso-dentate. Calyx-leaves linear, acute; corolla much exceeding the calyx, becoming smooth, 4 cm., yellow.

A. POTENTILLÆFOLIA var. AUSTRALIS Phil.

N. Patagon., Territory of Neuquen, along Rio Manzano.

A. TRIFOLIATA Hook.

With tripartite leaves.

N. Patagonia, near Rocco, by Rio Negro.

P. 728, after line 12 from foot, add the genus:

CAMPSIDIUM Seem.

Bentham & Hooker give it as a subgenus of *Tecoma*. As a simple-leaved variety of *Tecoma*, climbing without tendrils; corolla club-shaped, the spreading border 5-lobed. Stamens enclosed, with parallel thecæ. Fruit linear; seeds many, elliptical, winged.

C. CHILENSE Seem et Reiss. in Engl. & Prantl.

Magnificent climbing liana, winding without tendril or roots. The pinnate leaves have weakly winding spindles; leaflets leathery, toothed. Flowers in terminal, lax, few-flowered racemes.

P. 728: After *Campsidium*, add the genus:

ECCREMOCARPUS Ruiz et Pavon.

Ovary 1-celled. Tendril climbers, with pinnate leaves, and terminal, often one-sided racemes. Zygomorphous, tubular flowers, with small, spreading, 5-lobed limb, included stamens, and short-stalked, 1-celled ovary; fruit opening from below, the two valves remaining attached by the apex. Seeds many, winged.

E. SCABER Ruiz et Pav.

Of the group having corolla-tube ventricose-inflated above the calyx. Anthers ovate, refracted; capsule pediceled. Leaves bipinnate, all parts, leaves, flowers, sparingly hairy.

Chili.

Var. *sepium* (Bertero) has all parts glabrous; leaves a little fleshy, and rigid, and leaflets larger than in the type.

In Chilian hedges.

Var. *latiloba* Speg.

Fam. 102. GESNERACEÆ.—Macl., p. 728.

P. 729:

ASTERANTHERA CHILOËNSIS Hanst.

Is to be deleted by reason of its identity with the following species:

ASTERANTHERA OVATA (Cav.) Hanst.

Syn. *Chelone ovata* Cav.; *Asterantheris chiloënsis* Hanst.

Occurs in S. Chili; Chiloë Id.; W. Patagon.

MITRARIA Cav.

M. COCCINEA Cav.

Occurs in S. Chili; W. Patagonia, its northern section.

P. 730:

SARMIENTA REPENS Ruiz et Pav.

Occurs in S. Chili; W. Patagonia, its northern section.

P. 730, after line 4, add:

Fam. 102, *B*. OROBANCHACEÆ. Broom-rape.

Root-parasites, non-green, with scale-leaves. Stamens 4, didynamous, and occasionally a rudimentary fifth. Capsule 1-celled, placentæ 4, parietal; seeds with endosperm. Terminal spikes, or flowers solitary, in the axils of the scales.

Cosmopolitan.

OROBANCHE (Tourn.) G. Beck.

Sessile spikes. Calyx parted both before and behind, almost to the base, the parts 2-cleft. Corolla 2-lipped; upper lip 2-lobed, lower lip 3-lobed. Stamens included. Seeds numerous.

Old-world parasites, rare in America.

O. CHILENSIS (Phil.) G. Beck.

N. Patagon., at the confluence of Rio Limay with Rio Neuquen; near Carmen de Patagones; Mid-Patagon., along Rio Chubut.

Fam. 105. PLANTAGINACEÆ.—Macl., p. 731.

P. 733:

Plantago bismarckii Nied. should be deleted, not being found in our district.

P. 734:

PLANTAGO ŒLORRHIZA Morris & Macl.

This shows transitions to *P. oxyphylla* Speg. It is *P. barbata* (fide Kew.)

P. SEMPERVIVOIDES Dusén.

May be an extreme form of *P. oxyphylla* Speg. (fide Skottsb.)

P. 735:

P. HIRTELLA Kunth.

Is likewise to be dropped, as not in the district.

P. 736:

P. MYOSURUS Lam.

Is rather variable. Spegazzini in his paper, Nov. Addenda ad. Flor. Patagon., pp. 77–78, has established the following varieties of *P. myosurus* (*a*) *latifolia*, occurring in North Patagonia, in the district of the mouth o Rio Negro; (*b*) *hirta*, occurring in South Patagonia, between Puerto San Julian and Rio Deseado; (*c*) *taraxacoides*, widely distributed in South Patagonia, especially in the river valleys.

P. monanthus d'Urv. is regarded by Skottsberg as not a distinct species.

P. 737:

P. PATAGONICA Jacq.

This species also is rather variable; and Spegazzini has established varieties of it, as follows: (*a*) *typica*, common over all Patagonia; (*b*) *gracilescens*, occurring in North Patagonia at the confluence of Rio Limay and Rio Neuquen, also in the northern section of the east coast, as at Puerto San Blas; (*c*) *minuscula*, occurring along Rio Negro and along Rio Chubut, and Rio Sta. Cruz.

P. 738: Add after line 21, the following species:

20. P. MACROSTACHYS Dcne.

Perennial herb, differing from *P. candollei* in the length of the peduncle (60 cm.), and the structure of the flower. Leaves oblong-elliptical, toothed, or sublobate, 7–9-nerved (6 cm. broad) glabrous. Peduncles hairy above, much exceeding the leaves. Spike long, bracts lanceolate ciliate. Calyx-leaves unequal; the posterior rounded. Corolla-lobes cordate acuminate. Seeds 3.

Mid-Patagon., Chubut Territory, along Rio Carren-leofú.

P. 738: Add:

PLANTAGO PACHYNEURA Steud.

Stemless herb, with short, thick, subligneous rootstock, the radical leaves expanded, membranaceous, ovate-lanceolate, attenuate to a short petiole, coarsely toothed. Scapes exceeding the leaves, glabrous, flexuous, hairy upwards. Spike about 4 cm., lax below, dense above; bracts shorter than calyx, ovate, with scarious margin. Petals connivent, acute. Stigma scarcely exsert. Capsule 2-seeded, seeds margined, with a scar.

W. Patagon., its northern section, by Rio Reñihue.

22. P. PULVINATA Speg.

S. Patagon., near Rio Negro and along Rio Chico (of the Rio Sta. Cruz.), and Mid-Patagonia, at Lago Blanco.

23. P. SEMPERNIVOIDES Dusèn.

Description from Dusén's Neue und Seltene Gefässpfl. p. 37, Taf. 4, etc.

Caudex subterraneus, verticalis, superne 5.0–6.0, mm. crassus et foliis emarcidis defectis obtectus, primo simplex, demum apice dense ramosus, ramis brevibus, 3.0–4.0 cm. longis, linearibus, cum foliis 1.5–1.8 cm. crassis, inferne ramosis; folia densissime conferta, imbricata, incurvata, linearia, subconcava, lamina c. 7.0 mm. longa et 2.0 mm. lata, epetiolata, in vaginam parum ampliatam, subamplexicaulem, pilis longis albidis obtectam transeunte, integerrima, glaberrima, apice sensim acuminata, in cuspidem, c. 2.0 mm. longum, hyalinum, fragilem producta; scapi ex axillis foliorum suprem. oriundi, foliis breviores ad 6.0 mm. usque alti, graciles, glaberrimi, nudi, uniflori; bracteæ binæ, oppositæ, ad basin floris dispositæ, ovatæ, acutissimæ, c. 3.2 mm. longæ et 1.2 mm. latæ, membranaceæ, glaberrimæ, late et hyaline marginatæ, intus ad basin sublanatæ; sepala late ovata, c. 3.0 mm. longa et 1.8 mm. lata, concava, acutissima, scariosa, glaberrima, integerrima, subcarinata, marginibus late hyalinis; corolla glaberrima, tubo longitudine bracteis simili, lobis dependentibus, late ovatis, longe acuminatis, acutissimis, scariosis, tubo medio sublongioribus; capsula oblongo-ovata, c. 4.0 mm. longa et 2.0 mm. lata, paullo infra medium circumcissa, parte inferiore persistente.

S. Patagonia, in the mountains near Rio Fósiles (850–1,100 m.).

Caudex simple, at last densely branching, with short, thick branches; leaves densely imbricating, incurved, linear, subconcave, epetiolate, entire, glabrous, gradually acuminate, ending with a rather long, hyaline, fragile point, sheaths not much broader than the blade, covered with long white hairs; peduncles inserted in the axils of the uppermost leaves and shorter than these; slender, glabrous, naked, 1-flowered; bracts ovate, acute, membranaceous glabrous, broadly hyaline-margined, hairy inside at base; attached close to the flowers; sepals broad-ovate, concave, acute, scarious, glabrous, entire, subcarinate, with broad, hyaline margin; corolla glabrous, with tube of the same length as the bracts; the lobes dependent, broad-ovate, acute, scarious, more than half as long as the tube; capsule oblong-ovate, circumscissile below the middle.

26. P. UNIGLUMIS Wallr.

Herb with woody, cæspitose rhizome, in brown scales, and leaves, linear, acute, entire, silky-woolly below, but not bearded. Peduncle 1-flowered, as long as the leaves. Bracts ovate, glabrous. Petals ovate, mucronulate. Ovary globose, 2-celled, 6-seeded.

S. Patagon., at Lago Argentino, in the mountains (fide A. B. Rendle).

Fam. 106. RUBIACEÆ.—Macl., p. 738.

Add p. 740:

CRUKSHANKSIA Lechler. (*Solenomelus* Miers.)

Calyx-leaves separate, yellow. Staminal tube glandular-woolly. Fruits linear; stigma not divided. Leaves small, basal, or nearly so. Spathe solitary or several, long stalked.

P. 740:

NERTERA DEPRESSA Banks et Sol.

Specimens from Concepcion, Chili, have berries bright red, of a larger form, once called *Cunina-sanfuentes*.

GALIUM Tournef.

P. 741:

G. APARINE L. subsp. SPURIUM (L.).

P. 744:

G. SPURIUM L. (perhaps a var. of *G. aparine* L.).

Stem decumbent, retrorsely aculeate-scabrid, on the angles. Leaves in whorls of 6, lanceolate, mucronate, carinate, retrorsely aculeate. Peduncles many-flowered, longer than the leaves, in fruit glabrous.

Europe, Siberia, North Africa, Central Africa on the highest mountains; S. Patagonia, the Baguales district in the forests of deciduous beeches; Cabo Negro.

GALIUM RELBUN Clos.

Is to be deleted, as it belongs to the genus *Relbunium.*

P. 744: Add 9 lines from foot of page:

RELBUNIUM Endl.

Differs from *Galium* in having an involucre of 2–4 bracts, and the fruit fleshy or leathery. Its flowers are 4-merous, and its leaves in whorls of 4, lanceolate or elliptical.

Mexico southward to Argentina.

R. HYPOCARPUM (L.) Hemsl.

Syn. *Galium relbun* Clos.

Macl., specific characters, p. 744, no. 12.

Central and South Chili; N. Patagon., by Lago Nahuel-huapi; by Rio Palena.

Fam. 107. VALERIANACEÆ.—Macl., p. 744.

VALERIANA Linn.

P. 746:

V. CARNOSA Smith.

Occurs also in N. Patagon., Territory of Neuquen; by Hatcher, at Coy Inlet.

P. 747:

V. CRASSISCAPOSA Ok.

Should be deleted, being only a synonym of *Valeriana moyanoi* Speg.

P. 746: Macloskie's statements as to the absence of pappus from some of the species of Valerian, are incorrect; *Valeriana carnosa*, for example, is crowned with a well-developed, but fugacious pappus. *V. laxiflora* Ok., also has the pappus. *V. lapathifolia* likewise has a pappus. D.

V. LAXIFLORA Ok. (non DC.).

Occurs in Elizabeth Id. (Strait of Magellan), but so far as I am aware, not in Fuegia. It should be omitted, as it is only a synonym of *V. clarioneifolia* Phil. D.

V. LAPATHIFOLIA Vahl.

Also occurs in S. Chili; in W. Patagonia, Rio Puelo and Rio Reñihue.

V. MOYANOI Speg.

Syn. *V. crassiscaposa* Ok.

Occurs in Mid-Patagonia, Chubut; in S. Patagonia, Sta. Cruz Territory, viz., in its central and western sections.

P. 749:

V. OBTUSIFOLIA DC.

(The plants referred to this probably belong to *V. carnosa* Smith.)
Of the two names *V. salicariifolia* Vahl. and *V. salicifolia* Vahl., the latter appears to have the priority. The plant occurs in N. Patagonia, near Carmen de Patagones.

P. 750: Insert after line 9:

V. POLEMONIIFOLIA Phil.

Perennial hairy herb, lower leaves in a rosette, all pinnatipartite; their segments entire, oblong, acute, united at base; lower leaves gradually smaller, 8–10 cm. long; of this the petiole is half. Inflorescence terminal, paniculate-cymose, larger, narrow; bracts linear. Corolla white; carpels ovate-oblong, small, 1-nerved on one side, 3-nerved on the other, 30–50 cm. high.
S. Chili, Valdivia; N. W. Patagonia, by Rio Manso.

P. 750:

V. FONKII Phil.

Glabrous herb, with many-headed root; stem erect, 15 cm. Leaves coriaceous, radical leaves crowded, spathulate, the margins repand; cauline leaves few, oblong, entire, acute upwards, fimbriate-toothed, or like the lower. Panicle contracted, lax when fruiting; corolla rather large, 6 cm.

long, fleshy; stamens exsert; fruits large, compressed, ancipital, dorsally keeled.

W. Patagon., viz., its northern section, at Rio Puelo, and Rio Aysen, and Nahuel-huapi, nearly 4,500 m. above the sea-level.

17. VALERIANA FONKII Phil. var. SPICIFORMIS Dus. nov. var. (Plate III.)

Differt a typo foliis omnibus rosulatis scapo nullo vel brevissimo, pedunculis brevissimis, floribus dense spiciforme congestis.

The plant has a very peculiar appearance and reminds us of a *Viola* of the well-known Andine type; it is, however, a true *Valeriana*. Having collected, some years ago, *V. fonkii* Phil., on the mountains of the upper Rio Aysen, I found it a very easy task to point out its correspondence, in most respects, with the present plant. The variety has just the same flowers, bracts, leaves and fruits as the type, but differs in having more numerous and crowded flowers, more numerous leaves and very short scape or none at all. The plant was collected by J. Koslowsky in Mid-Patagonia in the district of Lago Buenos Aires. D.

Fam. 108. DIPSACACEÆ.—Macl., p. 750.

P. 751:

DIPSACUS SILVESTRIS Huds.

Any evidence of its occurring in our district is unknown to me. D.

D. fullonum L., the Fuller's Teasel, has a shorter involucre than *D. silvestris* Huds.; and stiff chaff, with hooked points, and has escaped from cultivation in many places. It occurs in N. Patagonia, Territory of Neuquen, here and there abundant, according to F. Kurtz (introduced). Die Naturl. Pflanzenfam., states that it is a culture form of *D. ferox* Lois. Macloskie refers to it as "supposed to be a cultivated variety of this species"; Dusén states that he is not in a position to decide the question of *D. fullonum* having been introduced into North Patagonia.

Fam. 109. CAMPANULACEÆ.—Macl., p. 151.

P. 752:

WAHLENBERGIA LINARIOIDES A. DC.

As far as known to me, this species has not been found in our district. D.

P. 753:

LOBELIA FLUVIATILIS Br.

Is synonym of *Isotoma fluviatilis*, p. 754.

P. 754: Add 11 lines from foot, the species:

3. PRATIA HEDERACEA Cham.

Branching and creeping glabrous perennial; leaves ovate-rounded, crenate-toothed; petioles shorter; pedicels axillary, exceeding the leaf, naked. Calyx-lobes lanceolate, acute, as long as the pyriform tube, subequal, 3–4 times shorter than the blue corolla; filaments villous at base.
Brazil; N. Patagonia, along Rio Negro.

P. 754:

P. LONGIFLORA Hook.

Is identical with *Hypsela longiflora* Benth & Hook. (same page), and should be omitted.

P. ATAKENSIS Phil.

Is identical with *Hypsela longiflora* of Benth & Hook.

ISOTOMA Lindl.

Calyx 5-parted. Corolla salver-shaped or funnelform, undivided, or slightly divided behind, nearly regular, filaments united to corolla halfway or higher. Anthers cohering; capsule 2–3-celled.

I. FLUVIATILIS (R. Br.) F. Muell.

Syn. *Lobelia fluviatilis* R. Br.

Creeping glabrous herb, with ascending branches. Leaves ovate, serrate, subciliate. Calyx and carpels pubescent. By Hatcher near Cape Fairweather.

The plant (fig. 95) referred to *Pratia repens* is *Selliera radicans* Cav. (fide Skottsbg.).

P. 754: Insert:

SELLIERA RADICANS Cav. (non Pers.).

Vice *Pratia repens* Gaud.

VALENTINIA Speg.

Calyx 5-parted, with lanceolate lobes, not enlarging after flowering. Corolla-tube cylindrical, lobes 45, imbricate, obovate, partly fugacious. Filaments very short, anthers distinct. Style short, with short broad stigma. Cells 1-seeded. Small shrubs, with low branches; leaves somewhat fleshy, obovate, orbicular, decussate. Flowers small, in simple or 3-partite cymes.

V. PATAGONICA Speg.

The difference of habit and the appressed fleshy leaves mark this. Fruit with scanty, fleshy exocarp and no endosperm.

Patagonia, by Rio Chubut.

Insert after *Candolleaceæ*, p. 756, after line 18 of the page:

Mildbraed on the *Stylidiaceæ* shows that we must amend our description of this family, so as to admit the genus *Donatia*, hitherto referred to the *Saxifragaceæ* (Macl., p. 460). Though *Donatia* is choripetalous, and its stamens are free from the style, and the Patagonian plant has trimerous andrœcium, and tricarpellary ovary, it appears to belong to the family of the *Stylidiaceæ;* so that the characters of the family must be:

Calyx adnate to the ovary; corolla rarely choripetalous, generally sympetalous and more or less zygomorphous; stamens rarely 3–2, and free; mostly 2 and coalescing with the style into a stylidium; anthers always extrorse; ovary rarely 3-merous, generally 2-merous.

STYLIDIACEÆ.

Are allied to Campanulaceæ, differing by having irregular flowers, with 3–2 stamens connate with the style into a column; leaves often spuriously whorled. (Chiefly in Australia, and the Pacific Isles.)

Suggestive gradations are observable, as epigynous glands representing absent parts, and the approximation of stamens to the style in the New Zealand genus *Donatia*, being a step towards their coalescence as in the other genera. The Patagonian, and the New Zealand-Tasmanian forms of *Donatia*, exhibit the parallelism, and at the same time the variation of numbers of parts; thus

Stamens 3, ovary 3-celled.	Antarctic American.	*Donatia fascicularis.*
Stamens 2, ovary 2-celled.	New Zealand, Tasmania.	*D. novæ zealandiæ.*

There is an approach to choripetaly and a reduction of parts in the Scrophulariaceous genus *Veronica*. According to this view, we must transfer to this family from Fl. Pat., p. 460, *Donatia fascicularis* Forst. (1776); *D. magellanica* Lam. (1781).

Characters and locations as at p. 460; found also at Magellan. (M.)

Genus PHYLLACHNE.

Flowers solitary, sessile. Corolla campanulate, with spreading segments. Stamens 2; ovary imperfectly 2-celled, with 2 epigynous glands. Capsule indehiscent.

P. ULIGINOSA Forst. (*Forstera muscifolia* Willd.).

Serrulate, dichotomously branching, 5 cm. high. Leaves lance-subulate, mucronate-acute, imbricate, with sheathing base. Calyx lobes scarious, and very narrow. Column exsert.

Patagonia; Magellan, Hermite Id., Fuegia.

Fam. 112. CALYCERACEÆ.

P. 757:

BOOPIS ALPINA Poepp.

Should be deleted, being only a synonym of *Boopis patagonica* Speg.

P. 758:

B. (?) AMEGHINOI Speg.

Should be deleted; see *Moscoppsis ameghinoi* (Speg.) Dus.

P. 759:

B. FILIFOLIA Speg.

Was found by Dusén at Lago Argentino, in fine sand.

P. 759, insert:

B. GRAMINEA Phil.

Glabrous perennial, with erect stem, virgate, striate, simple, 1-headed; leafless upwards. Leaves long-linear, entire, erect, the radical leaves crowded, narrower basewards; broader and shorter cauline leaves; involucre 8-leaved, equalling the head; pales setaceous; corolla-tube short.

N. Patagonia, Territory of Neuquen.

P. 760:

BOOPIS PATAGONICA Speg.

Syn. *Boopis alpina* Speg. (non Poepp.).

Occurs in S. Patagonia, in the valley of Rio Chico (of Rio Sta. Cruz); between Puerto San Julian and Rio Deseado; in the valley of Arroyo Scheuen, sometimes abundant.

P. 761. Add 4 lines from foot, the species:

B. PRICHARDI Rendle.

Low glabrous annual, with simple, erect stem, 4 cm. high, densely leafy; leaves sessile, narrowly linear or subspatulate, obtuse, entire, or toothed and lobed near apex. Heads subsessile, crowded, small and few-flowered; all fertile, or 1 sterile floscule in a head. Involucre campanulate, of 7 bracts, connate to mid; lobes triangular, ovate or oblong. Receptacle small, plane, naked. Calyx-lobes ovate, obtuse, shorter than the ovary. Corolla-tube obsolete, throat elongate. Filament-sheath narrow-oblong; anthers sessile, included.

Burmeister Peninsula. Stem hidden by narrow grass-like leaves. An apparently single terminal head. S. Patagonia, at Lago Argentino.

P. 762:

GAMOCARPHA AMEGHINOI Speg.

Should be deleted, being identical with *Moscopsis ameghinoi* (Speg.) D.

G. CALEOPUENSIS Speg.

Should be deleted, being identical with *Moscopsis caleopuensis* (Speg.) D.

G. PATAGONICA Speg.

Perhaps rather belonging to *Boopis*.

P. 762:

G. SUBANDINA Speg.—Macl., p. 762.

Should be deleted, being identical with *Moscopsis subandina* (Speg.) D.

Add Macl., p. 762:

G. SELLIANA Reiche.

Perennial, 50–70 cm. high, hairy, resembling *Boopis australis;* with rhizome black, many-headed. From a central rosette new rosettes branch out. Radical leaves 4 cm. long, narrow-spathulate; lamina short, subpinnatifid, with 2 lateral segments and a larger terminal segment. Scapes 1–4 times longer, clothed by linear leaves. Outer leaflets of involucre membranous, linear, inner leaflets passing to triangular bracts, acute, shorter than the flowers. Calyx 5-lobed. Corolla cylindrical funnelform, 4 mm. long, the limb with 5 linear-oblong segments. Filaments inserted in the throat, midway. Achenes cylindric prismatic, 3 mm. long.

Mid Patagonia, in the valley of Rio Cholila; near Lago Buenos Aires.

P. 764: Add after line 8 from foot, the genus, and four species:

MOSCHOPSIS Phil.

Outer involucre replaced by uppermost stem-leaves. Flowers fertile; calyx-teeth pointed, rather long; corolla cylindric. Stamens coalescing, united to mid of corolla-tube; glands not evident. Style cylindric; achene prismatic.

Shrubs, Chili.

M. CALEOFUCUSIS (Speg.) Dus.

Syn. *Gamocarpha caleofucusis* Speg.

Described by Macl., p. 762, nos. 1 and 2, with the distribution.

M. SUBANDINA (Speg.) Dus.

Syn. *Gamocarpha subandina* Speg. Described with distribution, Macl., p. 762, no. 4.

P. 764:

M. SPATHULATA Dus.—Dusén, Neue und Seltene Gefässpfl., p. 41, Taf. 5, Figs. 7–8; Taf. 8, Figs. 13–15.

Perennis, rhizomate subterraneo gracili, 1.0–2.0 mm. crasso, nudo vel squamis remotis obtecto, simplici vel pauciramoso; caulis brevis, 4.0–7.0 cm. longus, simplex vel pauciramosus; folia inferiora remota, minora, sursum sensim majora et densiora, imbricata, suprema rosulantia, spathulata, glaberrima, longe petiolata, integerrima vel rare ± distincte paucidentata, carnosula, c. 1.0 cm. longa, lamina 3.0–3.5 mm. lata et 3.0–4.0 mm. longa, recurvata, in petiolum sat longe decurrente, inconspicue nervata; capitula terminalia, solitaria, exinvolucrata, foliis caulinis supremis dense cincta; cetera ignota.

S. Patagonia, Rio Fósiles, on strong soils in the mountains (1,000–1,600 m.).

Perennial; stem low, simple or few-branched; the lower leaves remote, small, upwards gradually greater and denser, imbricate, the uppermost rosulate, spathulate, glabrous, long-petiolate, entire or rarely more or less distinctly few-dentate, fleshy, recurvate, indistinctly nerved, the limb long-attenuate basewards; heads terminal, solitary, without involucre, but closely surrounded by the uppermost leaves.

This species stands nearest to *Moschopsis leyboldi* Phil., which differs from the present in longer, elongate-spathulate, acute leaves.

As to its habit, this species reminds us of *Acicarpha rosulata* N. E. Brown. It is, however, less robust, having more rounded leaves, being entire or only laterally, never terminally, serrated. Whether *Acicarpha rosulata*, by reason of the absence of one involucre, ought rather to be placed in the genus *Moschopsis* may at present be left undecided.

MOSCHOPSIS TRILOBATA Dus. Dusén, Neue and Seltene Gefässpfl. P. 40, Taf. 5, Figs. 5–6; Taf. 8, Figs. 6–12.

Perennis; rhizoma subterraneum simplex, superne fragmentis foliorum emortuorum spiraliter dispositis obtectum, ad 3.0–4.0 mm. usque crassum, apice caulem unicum vel caules plurimos emittens; caulis ad 6 mm. usque altus, cum foliis c. 2.0 cm. crassus; folia densissime conferta, laete viridia, imbricata, carnosula, spathulata, petiolis lamina circiter bis longioribus, c. 1.2 mm. latis, subcaniculatis, lamina c. 3.0 mm. longa et 3.0–4.0 mm. lata, fere ad basin plerumque 3-lobata, lobis linearibus vel interdum oblonge obovatis, c. 1.0 mm. latis, incurvatis, hyalino-cuspidatis; capitula solitaria, sessilia, terminalia, densiflora, exinvolucrata, foliis caulinis supremis, interdum 5–7-lobatis cincta, receptaculo subhemisphaerico, paleaceo, paleis inferne membranaceis, superne viridibus, crassioribus, anguste linearibus, acutis, c. 6.0 mm. longis et 0.5–0.7 mm. latis, floribus multo brevioribus; calyx fere ad basin 5-fidus, laciniis angustis, sensim attenuatis, acutissimis, c. 3.0 mm. longis et basi c. 0.5 mm. latis; corolla alba, glaberrima, c. 6.0 mm. longa, infundibuliformis, infima parte dimidia tubulosa, limbo fere ad basin 5-fido, laciniis linearibus, acuminatis, acutis, stamina ad os tubi corollini inserta; stylus longe exsertus, filiformis, curvatus, stigmate subincrassato; achænia obscure pentagona, 4.5 mm. longa et 1.7 mm. crassa, valde rugosa, calyce persistente coronata.

S. Patagonia, Rio Fósiles in the mountains on denuded ground (800–1,100 m.).

Perennial; leaves densely imbricating, green, somewhat fleshy, spathulate, with subcanaliculate petioles twice as long as the lamina, 3-lobed nearly to its base, the lobes being linear or sometimes obovate, subincurved and hyaline-cuspidate; heads solitary, sessile, terminal, without an involucre, but closely surrounded by the uppermost 5–7-lobed cauline-leaves; receptacle subhemispherical, paleaceous, with pales membranaceous below, upwards green and thicker, narrow-linear, acute, much shorter than the crowded flowers; calyx 5-laciniate nearly to the base; with narrow gradually alternate, acute lobes; corolla white, glabrous, funnel-shaped, the lower half tubular, the limb 5-cleft, with linear, acute lobes; stamens attached to the mouth of the tube; style long exserted, filiform, curved, with thickened stigma; achenes indistinctly pentagonal, crass, very rugose, crowned by the persisting calyx.

Nearest to *Moschopsis caleofuensis* (Speg.) Dus., but differing in the hyaline-cuspidate lobes of the leaves, in the linear poles, and the narrow, acute lobes of the calyx.

Fam. 113. COMPOSITÆ.—Macl., p. 674.

VERNONIA Schreb.

(Syn. *Baccharis montevidensis* Spreng. not Griseb.).

P. 773:

V. NITIDULA Less.

It is doubtful if this species is found in Patagonia; I do not know any statement of its occurrence even in N. Patagonia. D.

STEVIA Cav.

P. 774:

S. MULTIARISTATA Spreng.

Is probably to be deleted.

S. SATUREIÆFOLIA (Lam.) Sch. bip. var. PATAGONICA Hieron.

It is known from North Patagonia. D.

P. 774:

EUPATORIUM L.

E. BACLEANUM DC.

This name is a synonym of the following:

E. COMMERSONII (Cass.) Hieron. Engler's Bot. Jahrb., vol. 22.

S. Brazil; Argentinian pampas; doubtful if it occurs in N. Patag. D.

E. BUNIIFOLIUM Hook. et Arn. Engler's Bot. Jahrb., vol. 22, p. 773.

Syn. *E. pinnatifidum* DC., *E. virgatum* Don.

Scarcely found in N. Patagon. D.

P. 776: For. *E. pinnatifidum* substitute *E. buniifolium* Hook. & Arn.

Syn. *E. pinnatifidum* DC., *E. virgatum* Don.

Macloskie's statements of this plant's occurring both in the United States and in N. Patagonia are hardly correct.. *E. pinnatifidum* DC. is considered a synonym of *E. buniifolium* Hook. & Arn.

It should be deleted, as we have no evidence of its occurrence in Patagonia; the statement that it exists in Eastern United States is also probably erroneous. Spegazzini represents it as occurring in the Province of Buenos Aires. D.

See Hieronymus on Flora Argentina in Engler's Bot. Jahrb., vol. 22.

P. 777:

E. HIRSUTUM Hook. & Arn. Engl. Bot. Jahrb., vol. 22, p. 758.

Syn. *E. subhastatum* Hook. & Arn.

Scarcely found in N. Patag. D.

Delete *E. macrocephalum* Less., not found in Patag. D.

P. 777:

MIKANIA Willd.

Vice *Willugbæa* Neck.

(See International Rules of Bot. Nomenclature) *M. scandens* (syn. *W. scandens*, Macl., p. 777.)

GRINDELIA Willd.

P. 779:

G. DISCOIDEA Hook. & Arn.

According to Lorentz & Niederlein, Rio Negro Expedition, it occurs in N. Patagon., at Rio Colorado. The plant is unknown to me. (D.)

P. 779:

G. SPECIOSA L. & P.

Also in Territory of Neuquen, N. Patagonia.

GUTIERREZIA Lag.

P. 781:

G. LINEARIFOLIA Lag.—Macl., p. 781.

Unknown to me. According to Macloskie its distribution is Mexico, Chili, Patagonia. Can this statement be correct? Dr. Reiche states that it is not known in Chili. D.

G. SPATHULATA Phil.

Also is to be deleted; it occurs in the Argentine Province of Mendoza (fide Dr. Reiche), but is not known from Patagonia, and certainly does not occur in Mexico. D.

P. 782:

LEPIDOPHYLLUM CUPRESSIFORME (Pers.) Cass.

A halophile plant, characteristic of the coast districts of S. Patagonia, Eastern Magellan and Eastern Fuegia, lacking in the genuine steppe vegetation, but yet occurring inland from the coast to the very heart of Patagonia, on the saline sandy clay of the deeply excavated river valleys, as in the valley of the Arroyo Scheuen.

NARDOPHYLLUM A. Gray.

P. 783: *N. darwinii* A. Gray, *N. kingii* A. Gray, and *N. parvifolium* Phil., seem to me to be identical; specimens seen by me. Common in the tableland of S. Patagon.; also on the east coast; Sta. Cruz; Puerto Mazaredo; Puerto Comoda Rivadaria; Cabo Blanco. D.

P. 783: N. HUMILE A. Gray.

Syn. *N. nardophyllum* OK.

Common in the steppe of S. Patagon., by Lago Argentino in the mountains up to 1,000 m.; in the mountains between Lago Viedma and

Laguna Tar about 1,000 m.; Lago San Martin about 350 m.; by Rio Fósiles, about 900 m. D.

P. 784: Delete *N. Nardophyllum*, etc. (see p. 963. Is a synonym of *N. humile* A. Gray, as stated by Spegazzini in Nov. Addend. Flor. Pat., I, p. 79).

P. 784:

NARDOPHYLLUM STÆHELINOIDES (DC.).

Should probably be deleted from the Patagonian Flora. According to Macloskie it was collected by Hatcher in S. Patagonia. It is, in my opinion, very probable that Hatcher's specimen belongs to *N. kingii* A. Gray, which is very common on the tableland by Rio Sta. Cruz. I have not seen Hatcher's specimens of this. D.

P. 784: Many of the species of *Solidago* here given are probably synonyms of *S. microglossa* DC. Thus, Dr. Reiche states that *S. coquimbana* Phil. (given in Macl. as *S. coquimbense*) is identical with *S. microglossa*, and should therefore be deleted.

S. patagonica Phil. is also probably a synonym of *microglossa*, as is *S. linearifolius* DC.

BELLIS Linn. European Daisy.

No pappus; achenes compressed; receptacle naked, conical; involucre hemispherical, its scales obtuse, naked, 1-seriate. Florets of disk yellow; of ray white, tipped with red.

B. PERENNIS Linn.

Perennial, scape 1-headed; leaves a rosette, spatulate-obovate, crenate, 1-nerved.

P. 785: Add:

HAPLOPAPPUS GLABRATUS Phil. Linnæa, Bd. 28, p. 727.

North Patagonia, Territory of Neuquen.

P. 790:

ERIGERON L.

The revision of the species of this genus must be based on much larger material than I have at my disposal at present; hence only a few remarks are offered.

P. 794: Substitute *Erigeron fernandezi* Phil., Anal. Univ. Chil., vol. 87, p. 718, vice syn. *Erigeron lacarensis* Phil., p. 794. D.

S. Chili, according to Skottsberg also in South Fuegia. D.

P. 794:

E. GLABRIFOLIUS DC.

Delete, as it is *Aster glabrifolius* (DC.) Reiche.

E. LACARENSIS Phil.

Delete, as it is *E. fernandezi* Phil.

E. LECHLERI Sch. Bip.

Delete, as it is *E. spiculosus* Hook. & Arn.

P. 795:

E. NEMORALIS Phil.

To be deleted, see *E. spiculosus.*

P. 796:

E. SEMIAMPLEXICAULIS Mey.

Is to be deleted, being *Aster glabrifolius* (DC.) Reiche.

E. SPICULOSUS (vice *spinulosus*) Hook. & Arn.

Includes synonyms *E. sordidus* Gill., *E. lechleri* Sch. Bip., *E. spinulosus* Phil. and *E. nemoralis* Phil.; is found in Chili, Patagonia, Magellan, Fuegia; very common in the lower parts of the deciduous forests throughout Patagonia and Fuegia. D.

P. 793:

E. BREVICAULIS Phil.

Dusén remarks that this species is unknown to him. Dr. Reiche thinks it is a synonym of *E. remyanus* Speg. (p. 796). Hence it must be deleted.

P. 788:

LAGENOPHORA Cass.

L. NUDICAULIS (Comm.) Dus.

Syn. *L. Commersonii* Cass.

The geographical area of this species is wider than that stated by Macloskie. It is found also in South Chili, and in Tristan d'Acunha. D.

Delete *L. harioti* Franch.; it is a synonym of *L. hirsuta* Less., being var. *gracilis* Alboff. D.

P. 788:

LAGENOPHORA HIRSUTA Less.

This species is found also in South Chili, and in N. W. Patagonia, Rio Puelo, and Rio Reñihue. D.

P. 789:

ASTER L.

A. GLABRIFOLIUS (DC.) Reiche.

Should be added, having as synonyms *Erigeron glabrifolius* DC. (Macl., p. 794), *Erigeron semiamplexicaulis* Mey., and *E. sconzonerifolius* Remy (both on p. 796).

Central Chili; Patagonia, especially in the pré-Andine district; Fuegia. D.

Professor Skottsberg writes: "I cannot find a sufficient reason for separating *Aster glabrifolius*, which these specimens approach, from *A. vahlii* Hook. & Arn."

A. LINIFOLIUS Linn.

Spegazzini states that it is found in Southern Patagonia, and cites Grisebach's Symb. Flor. Arg., but Dusén does not always find Grisebach's determinations trustworthy.

The Index Kewensis represents *A. linifolius* Linn., as only a synonym of *A. acris* Linn., of Southern Europe and the Caucasus. "I have not the material at hand requisite for clearing up this question." D.

P. 798:

CHILIOTRICHIUM DIFFUSUM (Forst.) Ok.

Is also in N. Patagonia, by Lago Nahuel-huapi. D.

C. ROSMARINIFOLIUM Cass.

Is also in N. Patagonia, Territory of Neuquen, and in N. W. Patagonia, by Rio Puelo. D.

P. 799:

C. ARMERIÆFOLIA Phil.

Dr. Reiche believes that this is a synonym of *C. linifolia* Phil. Linnæa, 28, p. 734. Spegazzini's statement that this occurs in S. Patagonia (Speg. Plant. Pat. Austr., p. 531), is I think, somewhat doubtful. D.

C. AUSTRALIS Phil.

Dr. Reiche believes that this is *Erigeron sylvaticus* Phil. Cf. Reiche Flor. Chil., iv, 365.

HETEROTHALAMUS Less.

P. 800:

H. NIVALIS (Sch. Bip.) Wedd.

Is found also in W. Patagonia, near Lago Argentino. D.

BACCHARIS L.

Dr. W. Heering has made the revision of this genus as far as the incomplete material permits. D.

P. 802:

B. BRYOIDES Pers.

The plant certainly does not belong to the genus *Baccharis;* Reiche supposes it to be *Melaleuca humifusa* Hook. D.

P. 803:

B. CHUBUTENSIS Speg.

Delete this, as it is not specifically distinct from *B. sagittalis* DC. D.

B. CONFERTA H.B.K.

This Mexican species cannot be also in the Falklands. Probably the specimen belongs to *B. magellanica*, which is the only one known in these islands.

B. CONFERTIFOLIA Colla.

This should be deleted; the specimen belongs probably to a form of *B. marginalis*, which is closely allied to *B. confertifolia*. D.

P. 803: Insert:

B. CYLINDRICA DC.

Belonging to DeCandolle's section *Caulopteræ*, having leaves oblong, linear, or none, the branches having leafy wings, decurrent on both sides from the leaf-bases. Is herbaceous, 3-winged, the wings plane, veiny, interrupted, and the leaves reduced to minute scales, the heads spicate, closely glomerate, the involucres of the males campanulate, of the females cylindrical oblong and cylindrical, with acute non-ciliate scales and very glabrous ovaries.

Brazil; North Patagonia, by Rio Negro.

P. 804:

BACCHARIS DUSENII O. Hoffmann.

This should be deleted, being identical with *B. melanopotamica* Speg. D.

P. 805:

B. GENISTIFOLIA DC.

This should probably be deleted; its occurrence in South Patagonia is very doubtful; and Macloskie's statement of its occurrence in Chili is also scarcely correct. D.

The specimens collected by Moren. Tonnini in Patagonia and determined by O. Kuntze as *B. genistifolia* represent, according to F. Kurtz, in Bot. Acad. Nac. Cienc. Cord., Tom xvi, p. 233, *B. darwinii* Hook. & Arn. (Macl., p. 803).

B. GILLIESII A. Gray.

This is to be deleted, as the plant is identical with *B. nana* Don. D.

B. JUNCEA Desf.

Widely distributed; in Bolivia, Chili, Argentina, Uruguay, North Patagonia, Mid-Patagonia, South Patagonia, from the east coast to the pre-Andine district, especially in the pre-Andine river valleys. D.

P. 806:

B. MAGELLANICA Pers.

This is found in South Chili; throughout Patagonia, especially in its western and southern parts, also in the mountains up to about 900 m.; and in Fuegia and the Falkland Is. D.

B. MELANOPOTAMICA Speg. with syn. *B. dusenii*, O. Hoffm., p. 806.

Not by the Fuegian river Rio Grande, as seems to be stated, but on the east coast of Mid-Patagonia by Puerto Madryn. D.

B. MACROPHYLLA Kunth.

Its occurrence in Patagonia is very doubtful. D.

P. 810: Add:

B. NIVALIS Sch. Bip.

Syn. *Heterothalamus nivalis* (Sch. Bip.) Wedd. (of Macl., p. 100).

In S. Chili, the Cordilleras; West Patagonia; Rio Puelo, Rio Palena, Rio Aysen, Lago Argentino, West Fuegia.

P. 806: Add:

B. PALENÆ Phil.

In N. W. Patagonia, by Rio Palena, Rio Aysen. D.

B. PATAGONICA Hook. & Arn.

It occurs through Fuegia and nearly all Patagonia, especially in its western parts, sometimes forming massive vegetation. D.

P. 807:

B. PINGRÆA DC.

Macloskie's statement of its occurrence in Patagonia is probably correct; but the statement of its occurrence in California is quite false. D.

P. 808:

B. ROSMARINIFOLIA Hook. & Arn.

Add var. *callistanoides* Heering, Reiche Flor. Chil, iii., p. 33.
N. W. Patagonia, Rio Manso.

P. 808: Add:

B. ROTUNDIFOLIA Spreng.

North Patagonia (fide Dusén).

B. SAGITTALIS.

Is found also in North Patagonia, at the confluence of Rio Limay, and Rio Neuquen. D.

B. SALICIFOLIA Pers.

This is not the true species, which belongs to the flora of Peru. The Patagonian specimens referred to it really are forms of *B. marginalis* DC. D.

P. 809:

B. SERRULATA Pers.

Should be deleted, not being found in Patagonia. D.

B. SUBULATA D. Don.

Is to be deleted, because it is identical with *B. juncea* Desf. D.

P. 810:

B. URVILLEANA Brongn.

This is a true *Baccharis*, belonging to the subgenus *Tarchonanthoides*. The statement of its occurrence in Magellan is undoubtedly a mistake. D.

P. 817:

Gnaphalium frigidum Wedd. This is not correctly named; the specimen is related to *G. affine* d'Urv. and is probably identical with *G. nivale* Phil., and *G. serpyllifolium* Remy, which I believe to be only one species. Call it *G. serpyllifolium* Remy (Skottsb.), as described in Macl., p. 818. In Cordilleras of S. Patagonia.

Skottsberg regards *G. chilense* H. & A., as possibly a form of *G. stachydifolium* Lam. (not yet reported from Patagonia).

P. 811. *Tessaria absinthioides* is also found in N. Patagonia, Territory of Neuquen.

P. 822:

XANTHIUM SPINOSUM Linn.

Occurs also in South Patagonia, by Sta. Cruz Emporium. D.

P. 827:

GAILLARDIA DONIANA Gris.

Occurs also in North Patagonia, by Rio Colorado.

P. 829, insert:

ANTHEMIS ARVENSIS L. Corn Chamomile.

Pubescent annual or biennial, not fetid; leaves less finely 1–2-pinnately parted than in *A. cotula*. Chaff of receptacle lanceolate, pointed; pappus a minute border.

Falkland Is., Port Stanley; introduced. D.

Macl., p. 829. *Anthemis cotula* Linn., is found also in N. Patagonia, Territory of Neuquen (introduced). D.

ACHILLEA MILLEFOLIUM L.

Also in the Falkland Is., Port Stanley, introduced. D.

Cotula acænoides (Hook. & Arn.) and *Cotula hombroni* Franch., are both identical, according to Reiche, with *Cotula scariosa* (Cass.) Franch. (Flor. de Chili, IV, p. 133.)

P. 833:

CULCITIUM Homb. & Bomp.

C. MAGELLANICUM Homb. & Jacq.

Has *Senecio tunicatus* Ok. as a synonym (Macl., p. 859); is found also in the western part of South Patagonia, by Lago Argentino, and Lago S.

Martin; in the mountains up to about 1,000 m. D. (Includes *Senecio vaginæfolius* Sch. Bojs.)

P. 830:

C. PEDUNCULARIS (DC.).

Should be deleted, not Patagonian, a Peruvian plant. D.

Add Macl., p. 833:

C. TENELLUM Dus. n. sp. (Plate III.)

Laxe cæspitosum, argenteo-tomentosum, humile, c. 5 cm. altum; rhizoma subterraneum, ramosum, in parte superiore vaginis foliorum emortuorum dense obtectum; folia basalia ad apicem rhizomatis dense conferta, spatiolata, vaginantia, vaginis membranaceis, pallide brunneis, extus pilis longis sericeis remote vestitis, intus glaberrimis, nervis ternis medianis exaratis c. 12 mm. longis et 5 mm. latis, apice raptim contractis, laminis anguste linearibus strictis patentibus, acutissimis, marginibus revolutis, c. 15 mm. longis et 1–1.5 mm. latis; capitula solitaria, sessilia vel in scapis ad 4 cm. longis, plerumque subcurvatis, tota longitudine foliatis, foliis quam basalia multo brevioribus disposita, c. 1.5 cm. longa et 1.5 cm. diam.; involucrum campanulatum, squamis c. 22, rigidis, uniseriatis, hyalino-marginatis, apice sphacelatis, extus dense tomentosis.

Pp. 837–860:

SENECIO L. Groundsel.

P. 837:

S. ACANTHIFOLIUS Homb. & Jacq.

Occurs also in S. Chili and W. Patagon. D.

P. 838:

S. ALLŒOPHYLLUS O. Hoffm.

Is found also in the Cordilleras of South Patagonia, viz., about Rio Fósiles, to 1,000 and upwards to 1,800 m. Professor Skottsberg after comparing our specimen with the type specimen of *S. allœophyllus* O. Hoffm., finds that it does not agree.

S. AMEGHINOI Speg. Nov. Addend. Flor. Pat., p. 7.

Mid-Patagon., near Lago Colu-huapi. *S. argentatus = sericeo-nitens.*

P. 839:

SENECIO ARGENTEUS Ktze.

Is to be deleted, being identical with *S. chilensis* Less. D. Syn. *S. candicans* DC.

S. AURICULATUS Alboff.

This name was preoccupied when given by Alboff, and has been changed by Skottsberg into *S. ombrophyllus.*

It occurs also in the southern section of West Patagonia. D. Described in Macl., p. 839.

S. ARGYREUS Phil. Anal. Univ. Chil., vol. 88, p. 261.

South Chili, in the Cordilleras; W. Patagonia in the steppe, especially near the forest-line, but also in the mountains. This species is known to me from the district of Ultima Esperanza, from Lago Argentino, where it also occurs in the mountains up to about 700 m.; from Lago Viedma up to about 500 m.; from the mountains between Lago Viedma and Laguna Tar up to about 1,000 m.; from Lago S. Martin; from Rio Fósiles up to about 850 m.; from the district of Lago Buenos Aires. I do not know of it from North Patagonia. In my early papers on the Patagonian Flora, this species was falsely referred to *S. argenteus* Kze. The same mistake was probably made also by Spegazzini, both in his Plant. Patag. Austral., and his Nov. Add. Flor. Patag. D.

S. AURICULATUS Alb.

With ligulate ray. Robust hairy perennial; leaves with petiole equaling the lamina, 10 cm., ovate-oblong, obtuse, basally cordate, pinnatifid or lobulate, crenate. Upper leaves lance-oblong, the petioles winged, with few lobules. Uppermost sessile, auricled. Stem cylindrical, corymbed upwards. Involucral bracts linear, acute. Ligules white; achenes ?.

Navarino Island.

S. BAKERI Reiche.

With ligulate ray. Woolly ascending shrub. Leaves densely appressed, the old as long as the branches, entire or obscurely toothed, blackish, the young white woolly?, obovate, spatulate, acuminate. Stems corymbed upwards, branches more than 1 cm. long, each ending in a solitary head, which is involucrate-calyculate, hemispherical-campanulate, with 20 linear-lanceolate involucral scales, woolly at base. Ligules about 12, disk-flowers numerous, short. Achenes costate.

W. Patagonia, by Rio Baker.

S. BIFURCATUS Less.

Also in S. Chili; through all of East Patagonia; Fuegia.

P. 840:

S. CANDICANS DC.

Syn. *S. argenteus* Kze.

Occurs in Central and Southern Chili; in West Patagonia, at least in the northern section, on the eastern slopes of the Cordilleras, for instance in the upper valley of Rio Aysen. D.

S. CAPILLARIFOLIUS Speg.

Heads discoid. Glabrous shrubs with slender, terete branches, scarcely striate. Leaves flaccid, the lowest linear-capillary, soon evanescent, glabrous or slightly hairy; the cauline glabrous and pinnately partite. Heads obconic, subcylindric, mostly solitary, long-peduncled, with no calycle; involucral scales 15–16; florets 50; achenes densely and minutely puberulous.

In S. Patagon., between Puerto San Julian and Rio Deseado. D.

S. CHOIQUE-LAUENSIS Speg.

Heads discoid. Erect robust perennial, with terete, woody branches; hoary cobwebby; leaves linear to oblanceolate, obtuse; the lower attenuate-petiolate, the upper sessile, amplexicaul, margins scarcely revolute. Heads laxly corymbed at tops of branches, small, sparsely calyculate, with longer or shorter pedicels; involucral scales 13, rigid, glabrous or nearly so, green, acute. Florets 35–40; achenes glabrous.

Dry rocky parts near Choique-lauen, Patagonia.

S. CHRYSANTHEMUM Dus. n. sp. (Plate II.)

Radiatus; suffrutex, c. 4 dm. altus, valde resinosus, odoriferus; rami basi lignosi, dense ramulosi, ramulis erectis, longis, lata longitudine foliatis, in parte inferiore cortice fusco-brunnea obtecta; folia suberecta, spathulata, marginibus revolutis, subcarnata, grosse serrata; dentibus utrinque 1–3 donata, spatiolata, infra mediam anguste linearia, c. 2 cm.

longa et explanata c. 9 mm. lata, dense glandulosa, glandulis sessilibus vel substipitatis, trinervata, nervo mediano lateralibus robustiore; inflorescentia subcorymbosa, capitulis perpaucis composita; pedicelli elongati, c. 5 cm. longi, bracteolati, bracteolis linearibus, angustissimis, integerrimis, centimetro longis, superioribus decrescentibus: capitula cupulata, c. 1.2 dm. longa et 1.6 dm. diam.; squamæ involucri anguste lanceolatæ, 8–9 mm. longæ, 1.6–1.8 mm. latæ, crassæ, dorso convexæ, membranaceo-marginatæ, glandulis sessilibus scaberulæ, apice sphacelatæ, uniseriatæ; flores in quoque capitula c. 140, flavi; ligulæ c. 15, c. 7 mm. longæ, ovales, apice tridentatæ; achænia glaberrima, 10-sulcata; pappus niveus, setis c. 75, serratis.

Abundantly found on densely grassy ground near the border of beech-forest, not far from Lago Viedma, and at an altitude of about 500 m.

SENECIO CHUBUTENSIS Speg. (Speg., Nov. Add. Flor. Patag., ii, p. 9).

Heads discoid. Glabrous, viscous, with lax, divaricate, sub-woody branches; and entire, subulate-filiform, acute leaves, narrowing at base. Branchlets naked, with 1–2 heads, the apex obconical, incrassate; the heads obconical, mediocre, with 1–3, or 0 calycles. Involucral scales 13, narrow, green, acute, apex ustulate, and white penciled. Florets 30. Achenes squamulous, puberulous.

In Mid-Patag., steppe near Choique-lauen. D.

S. COLU-HUAPENSIS Speg. (Spegazzini, Nov. Add. Flor. Patag., ii, p. 5).

Heads discoid. Plant white mealy, with long and branching root; branches crowded at base, densely leafy, making a hemispherical peat. Leaves spreading, small, sessile, linear-subspatulate, coarsely 3–5-toothed, revolute margined. Heads as long as the pedicels, or longer, broad-campanulate; involucral scales 13, linear-lanceolate, hoary, green-tipped. Florets 50. Achenes glabrous.

In Mid-Patagon., near Lago Colu-huapi; S. Patagon., by Lago Argentino in the mountains. D.

S. CYMOSUS Remy.

Branching shrub; base of stem becoming decorticate; branches tomentose, widely cymose at top. Upper leaves sessile, tomentose underneath, narrowly serrate. Panicle simple, cymose. No calyculus; involucral scales 9–13, oblong obtuse, dorsally arachnoid, becoming glabrate. Ligules about 11, linear; achenes hirtellate.

N. W. Patagonia, Rio Reñihue, Rio Aysen; Central and Southern Chili.

S. DEALBATUS Phil.

White-tomentose shrubs, with radiate heads; branches densely leafy at base, naked above, 1-headed. Leaves entire, oblong-linear, attenuate to a petiole; involucre campanulate, no calyculus; scales about 15, ligules 10–12. Achenes hirsute.

S. Chili, and Nahuel-huapi, of North Patagonia. D.

P. 843:

S. DELPHINI Phil.

Represents according to Reiche only a variety of *S. pratensis* Phil. D.

S. DIABOLICUS Speg. (Speg., Nov. Add. Flor. Patag., ii, p. 10).

Heads discoid. Subglabrous, stout, with woody branches; leaves linear-subulate, entire, acute downward, subamplexicaul at base; inflorescence mostly simple and subcorymbose; branches many-headed; peduncles 1–2-bracteolate, somewhat cobwebby; heads mediocre, cylindro-turbinate, 3–6-bracteolate; involucral scales 13, narrow, green, glabrous. Florets about 40, exceeding the involucre. Achenes glabrous, save on the costæ.

In Mid-Patagon., Territory of Chubut, near Cabo Raso. D.

S. DUMOSUS Phil.

Should be deleted; in my opinion is identical with *S. longipes* Hook. & Arn. I have, however, not seen specimens of this. D.

P. 845:

S. EXILIS Homb. & Jacq.

Should be deleted, being identical with *S. patagonicus* Hook. & Arn. D.

P. 846:

S. FLACCIDUS Homb. & Jacq.

Should be deleted; according to Reiche, Flor. Chil., iv, p. 257, is identical with *S. patagonicus* Hook. & Arn. D.

P. 846:

SENECIO FISTULOSUS Poepp.

This species is limited to Central Chili, as Dr. Reiche informs me. Its occurrence in S. Patagonia is consequently questionable; perhaps the determination is wrong, and the Patagonian specimen may be new. D.

S. aff. FALKLANDICUS Hook. f.

(Identity doubtful; got in fields near Punta Arenas.) Hooker's plant had external ligulate florets. The Belgican plant is near *S. andersoni*, which, however, is said to have narrower leaves and numerous heads. The Belgican specimen has heads solitary on ends of the branches. E. D. W.

S. FUEGIANUS = S. LONGIPES.

P. 848:

S. HAUTHALII Ok.

Should be deleted, being identical with *S. desideratus* DC. D.

S. HIERACIUM Remy.

Glabrous herb, with simple stem glaucous and terete. Radical leaves petiolate, oblong-lanceolate, others narrowing to a petiole, remotely toothed or entire; upper leaves sessile, oblong-cuneate, basally lobed, few-toothed in middle, entire at apex. Heads few, peduncled, subcorymbed; involucre campanulate, basi-bracted, its scales about 20, oblong-linear, acuminate with membranous margins, shorter than the disk. Ligules about 15, rather narrow. Achenes slightly hirtellous.

P. 848:

S. HIRTHI Phil.

Dr. Reiche regards *S. hirthi* as a synonym of *S. philippii* Sch. Bip. ms.; Wedd. Chlor. andin., i, p. 134.

P. 849:

S. IBARI Phil.

Should be deleted; in my opinion being identical with *S. longipes* Hook. fil. For further explanation see under that species. D.

S. INUTILIS Speg.

Heads discoid. Glabrous shrub with subherbaceous branches, and linear, acute, entire leaves, the margins narrowly revolute; petioles of lower leaves amplexicaul at base. Inflorescence corymbed, with many-headed branches, 3–5-calyculate close to the flower-heads, which are mediocre, turbinate. Involucral scales 13, narrow, green; florets 30, not much exceeding the involucre. Achenes glabrous.

In Mid-Patagon., Territory of Chubut, near Cabo Raso. D.

S. JULIANUS Speg. (Spegazzini, Nov. Add. Flor. Patag., ii, p. 2.)

Heads discoid. Hairy robust perennial, with cylindric stem, corymbed above, and silvery pubescence. Leaves small, thickish, erect, 3–8-rosulate, ovate, subacute or obtuse, abruptly cuneate at base to a long petiole, margin incise-toothed but not revolute. Scapes 3–4 times exceeding the leaves, naked or with few linear bracts, 1-headed; head broad-campanulate, sparsely calyculate; involucral scales 15–18, hoary, or nearly glabrate; florets 60–80. Achenes costate-angulate, glabrate.

In South Patagonia, near Puerto San Julian. D.

P. 849:

S. KINGII Hook. f.

Is also in N. Patagonia, Territory of Neuquen.

P. 850:

S. KURTZII Alboff.

Should be deleted, being identical with *S. kingii* Hook. fil. *S. paradoxus* Alboff is likewise a synonym of *S. kingii.*

P. 851:

S. LECHLERI Phil.

Should be deleted. Reiche in his Flor. Chil., iv., p. 258, has described the plant as an independent species, but with the remark, "perhaps identical with *S. danyausii* Homb. & Jacq." In my opinion we have to do only with a form of that species (see Macl., p. 842) being, as to its leaves, a very variable plant. D.

P. 852:

S. LONGIPES Hook. fil.

This has synonyms:

Senecio dumosus Phil.	*S. arnotti* Hook. f.
Senecio ibari Phil.	*S. crithmoides.*
Senecio nordenskjöldii O. Hoffm.	*S. limbardioides* H. & A.

Senecio fuegianus Phil.	*S. tricuspidatus* H. & A.
Senecio viscoides Reiche.	*S. viscoides* Reiche.

Senecio miser Hook. fil., var. *tehuelches* Speg.

In South Fuegia; Fuegian steppe, especially in the east coast; Magellan; South Patagonia in the steppe as well as in the deciduous beech forests.

A very variable plant as to its habit, size and denseness of the leaves, and degrees of its viscosity; the peduncles are always comparatively long (3–6 cm.) and 1-headed, with rather large heads. The typical plant is a rather common steppe plant, about 2 dm. high, growing principally on or near the coasts. The leaves are entire or few-toothed, and a few millimeters broad; the same specimen sometimes having entire as well as toothed leaves. The whole plant very viscous.

Dusén writes: "*Senecio viscoides* Reiche from Magellan forms, in my opinion, only a variety of *S. longipes.* The same form was collected by myself at Sta. Cruz; it is much smaller in habit than the type, has decumbent branches, ascending at the extremities; the leaves were toothed in the specimens collected by Reiche, and also in my specimens. The plant is resiniferous, much as the type. Another form which is taller, and more robust than the type, was collected by me in the interior of the territory of Sta. Cruz, as well as near the forest line not far from Lake Viedma. Its leaves were toothed, but narrower, and the heads somewhat greater than in the type. This form is no less viscous than the typical plant, and shows, in some respects, an intermediate position between the type and the following form.

"The fourth form belongs to the deciduous beech forests, and is as common in their lower parts as in their heights; it was found by me at least up to 950 m.

"The height of this robust form varies from about 4 to 7 dm. Its leaves are somewhat broader and weaker than in the type, and entire or few-toothed even in the same specimen. The heads are somewhat larger than those of the type. At first sight it seems specifically distinct from *S. longipes*, through its obtuse habit and the apparent absence of resiniferous glands. A careful examination, however, shows that the glands are not lacking, but they are comparatively few. No other specific difference of character from *S. longipes* is visible. I therefore endorse Skottsberg's doctrine that they are not specifically distinct." *S. crithmoides* H. & A. is another synonym.

P. 852:

S. MAGELLANICUS (Phil.) Macl.

Should be deleted, being identical with *Senecio patagonicus* Hook. & Arn. D.

P. 860:

S. MARTINENSIS Dusén.

(Dusén, Neue u. selt. Gefässpfl.—Archiv für Botanik, Bd. 7, no. 2, p. 43, Taf. 3, fig. 5; Taf. 6, fig. 3; Taf. 8, fig. 20.

From Professor Macloskie I received a specimen of a *Senecio* collected by Hatcher in the Cordilleras of South Patagonia and determined by Prof. Dr. O. Hoffmann as *S. pachyphyllus* Remy. Dr. Hoffmann had an opportunity to compare Hatcher's specimens with a specimen collected by Dr. R. A. Philippi and by him referred to *S. pachyphyllus.* My own specimens exactly agree with the specimen sent me by Prof. Macloskie.

In order to determine my specimen I had at my disposal no authentic specimen of *S. pachyphyllus*, but only the diagnosis given by Remy in Gay, Flora Chil., vol. iv., p. 147. The leaves of *S. pachyphyllus* are there described as follows: "foliis crassissimo-cylindraceis . . . acutis," which does not agree with my plant, its leaves being quite plane, but somewhat fleshy, and hardly acute. And further, *S. pachyphyllus* is described as quite glabrous, while my plant (being for the most part glabrous) is pilose on the margins of the leaf-sheaths, and of the basal parts of the scape-leaves, as well as on the margins of the outer scales.

I have therefore separated my plant from *S. pachyphyllus.* The two species, however, are near to each other.

Is known from the eastern slopes of the cordilleras, and grows in open humid places, in South Patagonia, near Lago San Martin (250–500 m.), and in Mid-Patagonia near Lago Buenos Aires. D.

P. 853:

S. MICROFOLIUS DC.

Is also identical with *S. patagonicus* Hook. & Arn., and should consequently be deleted. D.

S. MISER Hook. fil. var. TEHUELCHES Speg.

Probably belongs to *S. longipes*, as remarked by Skottsberg in his paper, "Zur Flora des Feuerlandes," p. 33. I am not very decided in this opinion, not having had an opportunity of examining this form. Strangely enough, Spegazzini never names *S. longipes* in his papers on the Flora of Fuegia and Patagonia. D.

Common in the steppe of South Patagonia, from the east coast to the forests in the pre-Andine districts, also in the mountains, by Lago Argentino up to about 700 m.; between Lago Viedma and Laguna Tar up to about 1,000 m.; by Rio Fósiles up to about 850 m., on the western side of the river; up to about 1,000 m. on the eastern side. D.

P. 854:

SENECIO MORENONIS Ok.

Should be deleted, being identical with *S. sericeo-nitens* Speg. D.

S. MUSTERSI Speg. Nov. Add. II, p. 12.

Mid-Patag., in steppe near Lago Musters.

S. NORDENSKJÖLDII Hoffm.

Is a form of *S. longipes* and should be deleted. D.

S. OMBROPHYLLUS Skottsberg.

Syn. *S. auriculatus* Alboff, which name was repeatedly preoccupied.

Skottsberg adds characters as follows:

Achenium (only known young), 5 mm. long, cylindrical, strict, glabrous, pappus 6 mm. long, yellow at base, whitish upwards.

Fuegia, Ushuaia, in shady moist places in woods; rarely.

S. PELQUENSIS Dus. n. sp. (Plate II.)

Discoideus; suffrutex c. 1.5–2.5 dm. altus, erectus, glaberrimus; caules multi conferti, infima basi ramosi, ramis ad medium 1–1.55 mm. crassis, simplicibus vel apicem versus pauciramulosis; folia anguste linearia, suberecta, ad 4 cm. longa et 1.5 mm. lata, carnosula, integerrima, acuta, internodiis 1–1.5 cm. longis; inflorescentia capitulis paucis (3–6) corymbosa; pedunculi c. 4 cm. longi, bracteis parvis, setaceis donati; capitula campanulata, solitaria, c. 9 mm. longa et 9 mm. diam., floribus flavis c. 110–120 in quaque capitulo; squamæ involucri uniseriatæ, c. 22, lineari-lanceolatæ, 0.1–1.2 mm. latæ et 6–6.5 mm. longæ, marginibus membranaceis, in parte superiore serrulatis, apice, integres vel vix sphacelatæ; achænia glaberrima; pappus niveus, setis serrulatis c. 7 mm. longis.

Abundantly found on grassy ground in the valley of Arroyo Pelque (S. Patagonia, Territory of Sta. Cruz).

P. 856:

S. POLPHYLLUS Kze.

Though I have not examined the specimens collected by Hatcher, it seems to me questionable whether this species occurs in South Patagon. Probably the determination is faulty. D.

P. 857:

S. SERICEO-NITENS Speg.

Syn. *S. patagonicus* Phil., *S. argentatus* Spence-Moore, *S. Morenonis* Ok.

Mid and South Patagonia, especially in its western parts, where it is rather common; also in the mountains up to about 1,000 m. D.

S. SETULOSUS Phil.

Is regarded by Dr. Reiche as a synonym of *S. tristis* Phil.

S. SIMPSONI Phil.

Hairy herb, 20 cm. Stems simple, with adventitious roots. Leaves crowded, semi-clasping, narrow, linear, mucronate, 25 by 15 mm. Stem with 3 shortly-peduncled heads, in axils of leaves. Involucre of 30 scales, reddish-green, 7 mm. Achenes hairy.

W. Patagonia.

S. TRISTIS Phil.

Decumbent shrub, with discoid head, densely glandular hirsute branches, naked at top; leaves crowded below, linear, obtuse, narrowed at base, entire or with few coarse teeth on both sides. Bracts 2 or 3, subulate at base of heads; scales 12 nearly, long acuminate, with black point at tip, and with pencil of white hairs. Achenes glabrous, ribbed.

Low mountains at Lake Aculco.

S. TUNICATUS Ok.

To be deleted, being *Culcitium magellanicum* H. & J.—Macl., p. 833. D.

S. VAGINÆFOLIUS Sch. Bip.

Is also *Culcitium magellanicum* H. & J. D.

Rather large radiate heads. On Rio Chico.

SENECIO VERRUCULOSUS Ok.

To be deleted, being identical with *S. miser* Hook. fil., a specimen of *S. verruculosus* Ok. in Herb. berol., agrees exactly with *S. miser*. D.

S. VIRENS Phil.

Herbaceous, hairy, erect, simple, 30 cm. high, stem-leaves ovate-oblong, lobed-toothed. Corymb heads calyculate, with 10–12 bractlets; ligules 3–6. Achenes hairy.

N. W. Patagonia, by Rio Palena.

In Mid-Patagonia; Territory of Chubut, pre-Andine district.

P. 861:

ERIACHÆNIUM Sch. Bip.

E. MAGELLANICUM Sch. Bip.

Also in South Patagonia, near Sta. Cruz Emporium. D.

P. 861:

CIRSIUM Scop.

C. LANCEOLATUM (L.) Scop.

Syn. *Carduus lanceolatus* L., in Macl., p. 861.

Introduced into S. America; but so far as I know, it is not found in Patagonia. D.

P. 861, 4 lines from foot, insert:

CALENDULA Neck.

C. arvensis Linn. and *C. officinalis* Linn. occur, according to Spegazzini, in North Patagonia, near Carmen de Patagones; introduced.

P. 861, add after *Calendula:*

CENTAUREA Linn.

Achenes compressed; pappus varying; involucre imbricated; florets of disk perfect, of margin neuter, larger, ray-like.

C. CYANUS Linn. Corn Blue-bottle.

Scales of involucre with brown toothed margins; rays bright blue. Leaves linear-lanceolate entire, the lowest toothed pinnatifid. Pappus pilose, short.

Add Macl., p. 861, *Centaurea calcitrapa* Linn. Star-thistle. Much branched. Leaves pinnately lobed or toothed; heads sessile, the inner scales of the ovoid involucre spiny. Pappus none; flowers purple. Annual. N. Patagonia; along Rio Negro, on the east coast by Puerto San José; S. Patagonia, by the mouth of Rio Sta. Cruz.

Introduced from Europe.

P. 863, add the genus and species:

DUSENIELLA (O. Hoffmann sub *Dusenia*) K. Schm. (P. Dusén, Beiträge Flora von Ost-Patagonien, non *Dusenia* Broth. genus *Muscorum*).

D. PATAGONICA (Hoffm.) K. Schumann in Just. Bot. Jahresber., 28.

Description of genus and species in Macl., p. 866, sub *Dusenia*.

Mid-Patagonia, near Rawson; S. Patagonia, Pto. Comoda Rivadavia, common in saline clay, Pto. Mazarado; in the valleys of Rio Sta. Cruz and Rio Leona; by Lago Viedma; in the valley of Arroyo Scheuen; on many places forming moss-vegetation. D.

P. 863:

CARTHAMUS Linn. Safflower.

C. MAGELLANICUS Lam.

This genus is certainly not represented in the Patagonian flora. The Magellan plant which Lamarck referred to it, appears in fact to be *Perezia*, probably *Perezia lactucoides* Less. (p. 893). D.

CHUQUIRAGA Juss.

P. 863:

C. ACICULARIS Don.

Is also spread far northwards on the east coast of Patagonia, but rare, for instance by Puerto Madryn, and Puerto San Antonio. D.

P. 864, line 3, insert:

C. argentea Speg., whose synonym is *Doniophyton argenteum* Speg. (of p. 866). Also *C. spinosa* Don. var. *morenonis* Ok.

S. Patagonia, in the steppes by Rio Gallegos, Rio Sta. Cruz, Rio Chico, and near Puerto San Julian. D.

According to F. Kurtz this species may be regarded as a variety of *C. spinosa*, as indicated above. Whether M. Spegazzini's view that it is an independent species is preferable to the view of M. Kurtz I am not able to decide. On this question I offer no opinion. D.

P. 864:

CHUQUIRAGA DUSENII O. Hoffm.

Should be deleted, being identical with *C. kingii.* Spegazzini has erroneously united *C. dusenii* with *C. argentea* Speg., thinking that the former is only a variety of the latter. In Nov. Add. Flor. Patag., ii, p. 17, he writes "est forma robusta . . ., sed nullo modo a typo recedens; sæpe in eodem cæspite forma typica et forma dusenii simul inveniuntur." I presume that he does not know, or at least does not well know *C. kingii.* Writing this in an exploring excursion in South Brazil and not having any specimens at hand of the two species, I am, unfortunately, unable to note the strikingly different characteristics of the two species. I may say, however, that *C. kingii* is a robust, stiff shrub, about 8–10 dm. high; and *C. argentea*, on the other hand, is a much weaker shrub, generally about 2 dm. high. They occur also in different localities; *kingii* is limited to North and East Patagonia, having its southern limits about S. lat. 44°; *argentea* is, as already stated, limited to South Patagonia. D.

P. 864:

C. ERINACEA Don.

Macloskie states that this species occurs on the east coast of South Patagonia. This statement is undoubtedly incorrect, and is based on a mistake made by Spegazzini in Nov. Add. Flor. Patag., ii, p. 18, line 10, where *C. erinacea* Speg. (non Don) should be replaced by *C. acicularis* Don. (Plant. Patag. austr., no. 221, cited by Spegazzini refers by name to the last-mentioned species). Spegazzini makes another mistake in uniting *C. hystrix* Don with *C. acicularis* Don, two species which are well distinguished from each other. D.

Skottsberg writes regarding this specimen: "I cannot get a better name for the species; but the specimen does not correspond with *C. erinacea* in all respects. The flowers are more numerous than in *erinacea.*"

P. 865:

C. HYSTRIX Don.

Spegazzini's statement of the area of this species is naturally too wide because of his opinion that it is identical with *C. acicularis.* The present plant extends chiefly over northern and eastern Patagonia, being limited on the south by the 44th parallel. D.

C. PATAGONICA Phil.

Should be deleted, as it belongs to the genus *Doniophyton.* D.

C. SPINOSA Don.

This species scarcely belongs to the Patagonian flora. Macloskie states that it is found in North Patagonia; but I do not know of its having been found even in the most northern part of the district. D.

P. 865, insert, 3 lines from foot:

C. UNGUIS-CATI Cas.

According to Spegazzini (Nov. Add. Flor. Patag., ii, p. 18) in North Patagonia, by Rio Negro. Cf. also Lorentz & Niederlein, Rio Negro Expedition, *Chuquiraga erinacea* Don, var. *mollior* Lor., p. 243, 244. D.

P. 865:

DONIOPHYTON Weddel.

After p. 866, line 7, add:

D. ANOMALON (Don) F. Kurtz. Bot. Acad. Cienc. Cordoba, xiii (1893), p. 187.

Syn. *Chuquiraga anomala* Don, Trans. Linn. Soc., xvi, p. 282.

D. ANDICOLUM Wedd. Chloris Andina, i, p. 8, tab. 4 *B.*

This species is known to me only from subandine districts; its southernmost locality is in the southern part of Chubut Territory. According to Spegazzini, Nov. Add. Flor. Patag., ii, p. 18, it is not rare in the valley of Rio Chico (Territory of Sta. Cruz), and in the valley of Rio Mayo (Territory of Chubut). I am, however, inclined to regard these statements as referring to *D. patagonicum* Phil. D.

D. PATAGONICUM Phil.

North Patagonia, the east coast, by Puerto San Antonio; South Patagonia, in the valley of Arroyo Scheuen, abundant at several localities. (See above under *D. anomalum.* D.)

Annual, pubescent; leaves alternate, linear, mucronate-spinose; spines by 4's in the axils, short; outer involucre-scales recurved; innermost very long, very acute, golden; ray flowers female, sometimes 5-toothed. Chili.

P. 866:

DONIOPHYTON ARGENTEUM Speg.

Identical with *C. argentea* Speg.; consequently to be deleted. D.

P. 867:

D. GLUTINOSA Don.

In N. Patagonia, Territory of Neuquen.

LAVIDIA Phil.

This genus must be deleted, being identical with *Brachyclados* Don (p. 872).

CYCLOLEPIS GENISTOIDES Gill. & Don.

Common on the lower Rio Limay and the lower Rio Neuquen; by Rio Negro; on the east coast by Rio Pto. San Antonio; by Pto. San José and Pto. Madryn.

P. 872:

BRACHYCLADOS Don.

Add the following species and notes:

B. CÆSPITOSUS (Phil.) Speg.

Syn. *Lavidia cæspitosus* Phil., described Macl., p. 872. Also *B. obtusifolius* Ok., and *B. pygmæus* Ok.

S. Patagonia, Rio. Sta. Cruz, common on the tableland; also in the river valley; Lago Argentino, in the valley of Rio Leona; in the valley of Arroyo Scheuen; on the east coast by Rio Sta. Cruz; Puerto San Julian, Pto. Comodor Rivadavia; Cabo Blanco.

B. lycioides Gill. & Don., p. 873, top of page.

In Central Chili; North Patagonia; Mid-Patagonia, in Territory of Chubut.

B. MEGALANTHES Speg.—Speg., Nov. Add. Flor. Pat., ii, p. 19.

N. Patagonia, by Rio Negro; on the east coast by Pto. San Antonio; Mid-Patagonia, by Puerto Madryn.

B. OBTUSIFOLIUS Ktze.

Should be deleted, being identical with *B. cæspitosus* (Phil.) Speg. D.

B. (DASYCLADOS) PYGMÆUS Ok.

Should be deleted for its identity with *B. cæspitosus.*

P. 874:

MACRACHÆNIUM Hook. f.

M. foliosum is to be deleted, being a synonym of the next (fide D. and Sk.).

M. gracile Hook. f., occurs also in S. Chili and W. Patagonia.

P. 875:

NASSAUVIA.

P. 877:

N. ABBREVIATA (Hook. & Arn.).

Also in S. Patagonia, Territory of Sta. Cruz, Rio Sta. Cruz and Rio Chico. The specimens from the mouth district of Rio Chico are erroneously referred by Macloskie to *Nassauvia subspinosa* Phil.; near Lago Argentino; near Lago Viedma, in the mountains (about 400 m.); the mountains between Lago Viedma and Laguna Tar up to about 900 m.; in the mountains by Rio Fósiles, about 850 m.

N. ABBREVIATA var. SUBSPINOSA (Phil.).—Macl., p. 877.

Without description. Macloskie may have supposed this to be identical with Philippi's species *N. subspinosa* (of p. 884); but this species is, in my opinion, not to be distinguished from *N. abbreviata* (Hook. & Arn.), and hardly worthy the rank of a variety. D. (Delete both var. and species *N. subspinosa.* G. M.)

P. 878:

N. CANDOLLEI Macl. (*Panargyrus lagascæ* DC., 1838).

"Unknown to me." D.

P. 879:

N. DARWINII (H. & A.).

Also in S. Patagonia, not rare in the tableland by Rio Sta. Cruz, and Arroyo Scheuen, and Rio Chico. At Killik-aike on Rio Gallegos.

P. 879, add:

NASSAUVIA DENTATA Griseb.

Many stems, 10–20 cm., much branching. Lower leaves dividing into 5 spinelike branches, hairy. Heads numerous, white terminal glomerules 10–15 mm. long, subglobose, intermingled with the leaves. Involucral leaves lanceolate, acuminate, pubescent.

Chili, N. W. Patagonia, upper valley of Rio Puelo.

P. 879:

N. DUSENII O. Hoffm.

In South Patagonia, by rivulets near Rio Argentino; along the banks of Rio de las Vueltas, near Lago Viedma; Lago San Martin by a rivulet; by Rio Fósiles from about 800 m. to 1,500 m.

P. 880:

N. HETEROPHYLLA Alboff, and (p. 884) N. SUAVEOLENS.

Are synonyms of *N. magellanica* Gmel., and therefore to be deleted. (D. & Sk.)

N. MAGELLANICA Gmel.

Occurs also in S. Patagonia near Lago Argentino. (The same with *N. purpurea* Spencer Moore, fide Skotts.)

N. MODESTA O. Hoffm.

Occurs in S. Patagon., Territory of Sta. Cruz, on dry sandy places near the Rio Sta. Cruz, in the valley of Arroyo Pelque, near Lago Argentino; in the mountains between Lago Viedma and Laguna Tar, up to about 900 m.; in the valley of Arroyo Scheuen.

P. 881:

N. MORENONIS Ok.

Should be deleted, being identical with *N. ameghinoi* Speg.

N. nivalis should be deleted, not belonging to the Patagonian flora. The specimens referred by Macloskie to this species belong in my opinion to *Nassauvia revoluta*. D. Skottsberg refers the specimen to *N. nivalis* Poepp. & Endl.

P. 881 and plate XXVIII, *A*:

N. NORDENSKJÖLDII O. Hoffm.

Should be deleted, being identical with *N. pygmæa* (Cass.) Hook. f.

N. PATAGONICA Speg.

Should be deleted, being identical with *N. ulicina* Hook. f.

Syn. *Trianthus ulicinus* Hook. fil.

P. 882:

N. PUMILA Poepp. & Endl.

Also in S. Patagonia, in the mountains of Lago Argentino, at about 1,000 m.; by Lago San Martin in the mountains, 500 m.; in the mountains of Rio Fósiles, 800–1,500 m.

P. 885, after line 6, add:

N. PENTACÆNOIDES Speg.—Speg., Nov. Add. Flor. Patag., ii, p. 24.

South Patagonia, near Karr-aike by Lago Argentino; in the valley of Rio Leona; in the mountains between Lago Viedma and Laguna Tar from about 500 m. to about 1,000 m.; in the upper valley of Arroyo Scheuen near the isolated mountain Kasch-aike.

Add Macl., p. 882:

N. PURPURASCENS Spenc. Moor.

Cæspitose, 10 cm. high, with leafy branches from the base; radical leaves ovate-oblong, acute or spinose-acuminate, glabrous, below entire, above 3–4-toothed, lobulate each side; cauline leaves imbricate, lanceolate, spinose apically, entire or spinose-toothed, pubescent, purplish. Glomerules terminal, globose; floral leaves smaller, linear-lanceolate, heads 5-flowered; involucres 3-seriate; anterior corolla-lip 3-toothed, posterior 2-toothed; achenes compressed; pappus-pales setiferous, 1-seriate.

South Patagonia; beaches and mud-flats of Lake Argentino.

Macl., p. 882: *Nassauvia pygmæa* (Cass.) Hook. f., Syn. *N. pumila* Alboff, cf. Skottsberg, Flor. Feuerland, p. 36; *N. nordenskjöldii* O. Hoffm.

S. Patagonia, in the mountains near Lago Argentino. (Plate XXVIII, *A*.)

P. 882:

N. REMYANA Wedd.

Unknown to Dusén, who doubts whether such a species exists in Patagonia.

P. 883:

NASSAUVIA REVOLUTA Gill.

In South Fuegia; South Patagonia, in the mountains near Lago Argentino (1,000 m.); and in the mountains by Rio Fósiles, about 1,500 m.

N. ROSULATA (H. & A.)

Is in South Patagonia, common in the tableland.

Add Macl., p. 885:

N. SCEPTRUM Dus. spec. nov. (Plate III, 1–4.)

Mastigophora, laxe cæspitosa, glaberrima; rhizoma subterraneum . . . rami adscendentes, biformes, seniles laxe imbricatim foliosi, foliis vagina excepta e 3.5 cm. longis et c. 1 cm. latis, omnibus grosse dentatis, dentibus subspinosis, nervo mediano robusto, fertiles ad 2.5 dm. usque longi, foliis basalibus dentatis, ceteris integerrimis, laxe imbricatis, apice spinosis, vagina excepta c. 2 cm. longis et 7 mm. latis, nervo mediano minus robusto; capitula cylindrica, c. 15 mm. longa et 4 mm. diam., in axillis foliorum supremorum solitaria vel bina; squamæ involucri 1-seriatæ, lanceolatæ, vel lineari-lanceolatæ, c. 19 mm. longæ et 3–4 mm. latæ, virides vel plus minusque purpurascentes, intimæ breviores, angustiores, vix 1 mm. latæ, membranaceæ, albescentes; flores in quoque capitulo 4, labris albis; achænia pentagona, prismatica, glaberrima; setæ pappi angustissimæ, membranaceæ, fragiles, facile caducæ.

South Patagonia, near Lago Viedma on the side of Rio de las Vueltas (21, ii, 1905, N. 5887).

N. SCLERANTHOIDES O. Hoffm.

South Patagonia, by Cabo Blanco and Puerto Rivadavia, in the valley of Rio Leona, in the valley of Arroyo Scheuen, by Potel-aike and Korpenkaiken, as well as in the upper part of the valley.

Macl., p. 884:

N. SERPENS d'Urv.

Macloskie's statement of this plant's having been found by me in the upper valley of Rio Aysen is based on a false determination made by me. The specimens concerned really belong to the type of *Nassauvia dusenii* O. Hoffm. (Macl., p. 879, and plate XXX, *C*, *D*.) D.

P. 884:

N. SUAVEOLENS Willd.

Should be deleted, being identical with *N. magellanica* Gmel.

P. 884:

N. SUBSPINOSA.

Should be deleted; see above under *N. abbreviata subspinosa* Phil. (p. 877). The specimens collected by Hatcher at the head of Rio Chico, and referred by Macloskie to *N. subspinosa*, undoubtedly represent, not a distinct species, but the *subspinosa* variety of *N. abbreviata* (Hook. & Arn.) D.

P. 885:

N. ULICINA Hook. f.

Is found at Killik-aike in S. Patagon.

P. 886, after line 6, add:

TRIPTILION ACHILLEÆ DC.

Chili; N. Patagon., near Lago Argentino; Mid-Patagon., near Lago Buenos Aires.

Stem herbaceous, erect, simple, velvet-hairy; leaves pinnatiparted, 5 lobes on each side, linear, regular, unarmed; heads corymbose, crowded on top of stem. Annual, 3–4 inches tall.

P. 887:

LEUCERIA, LASIORRHIZA.

Where this group is treated as a single genus, the form *Leuceria* is often preferred. Bentham & Hooker distinguish *Lasiorrhiza* as a subgenus, by the fact that its involucre is 2–3-seriate, as against 3–4-seriate; and the receptacle has few pales in *Leuceria*. But these are not constant characters. Engler & Prantl regard *Lasiorrhiza* Lag. (*Chabrea* DC.) as a section under *Leuceria*, having a 1–2-seriate involucre, and no chaff between the outer flowers on the receptacle. All the forms of both sections have a plumose pappus, more or less long, and flowers never white.

P. 888:

LASIORRHIZA ACHILLEIFOLIA (Hook. & Arn.)

Syn. *L. anthemidifolia* (Phil.) Ok. On same page; also *L. ibari* (Phil.) p. 890; perhaps also *L. multifida* (DC.).

In N. Patagonia, Lago Nahuel-huapi; Mid-Patagonia, near Lago

Buenos Aires, and along Rio Chubut; S. Patagonia, Bahia San Jorge by Puerto Mazarado, Puerto San Julian, Sta. Cruz Emporium, in the heart of the Territory of Sta. Cruz by Cañadon de las Cuevas; near Lago Argenino, by Lago Viedma, up to about 500 m.; by Lago San Martin; by Rio Fósiles up to about 550 m.

LASIORRHIZA CANDIDISSIMA (Gill. & Don.)

Syn. *Leuceria lanata* Alboff, *Leuceria gracilis* Alboff; cf. Skottsberg, Flor. Feuerl., p. 36.

Also in the Cordilleras of Central and South Chili; Mid-Patagonia, near Lago Buenos Aires.

The specimens collected by Hatcher and labeled "head of Rio Chico" (p. 888) do not belong to this species, but to *Lasiorrhiza hoffmanni* Dus. I am inclined to suppose that some confusion has occurred concerning the locality, and that these specimens were actually got in the Cordilleras. So far as I know, this species has never been found in the tableland; but on the other hand, it is not rare in West Patagonia, viz., in the pre-Andine district at the height of 600–700 m. D.

L. FUEGINA (Phil.) (Macl., sub. *L. fuegina* (DC.) Ok.)

Is to be deleted; Reiche shows that it is a syn. of *L. halmii* (Franch.). See Reiche, Flor. Chil., iv, p. 420.

P. 889:

L. GRACILIS Alboff.

Is to be deleted, being identical with *L. candidissima* (Gill. & Don). (Skottsberg uses the generic name *Leuceria*).

P. 889:

L. HAHNII (Franch).

Hitherto known only from S. and E. Fuegia; Macloskie's statement of it as found by Hatcher at the head of the Rio Chico refers to *Lasiorrhiza patagonica* (Speg.) D.

P. 889:

L. HOFFMANNI (Dus.)

In South Patagonia, in the Cordilleras, by Lago Argentino; collected in the Cordilleras by Hatcher, but the locality not stated; in Mid-Patagonia, near Buenos Aires.

P. 890:

L. IBARI (Phil.)

Should be deleted, being *L. anthemidifolia* (Phil.) Ok. of p. 888.

P. 890:

L. LANATA (Alboff)

Should be deleted, being identical with *L. candidissima* (Gill. & Don.) of p. 888.

P. 890:

L. LANIGERA O. Hoffm.

Should be deleted, being *L. leontopodioides* Ok., p. 890.

P. 890:

L. LEONTOPODIOIDES Ok.

Syn. *L. lanigera* O. Hoffm., is found also by Lago Argentino in the mountains. (D.)

L. SCROBICULATA (DC.)

Should be deleted; the specimens referred by Macloskie to this species belong, according to determinations made in Kew Gardens Museum, to *Lasiorrhiza purpurea* (DC.) Professor Skottsberg writes: "I should call it a hairy form of *L. purpurea*; but it has some characters of *L. leontopodioides* O.k"

P. 891:

L. PURPUREA (Vahl.) O. Hoffm. et Dus.

Not rare in the tableland of S. Patagonia, by Manantiales (Richmond) near Sta. Cruz Emporium, Barranca Blanca, Cañadon de las Cuevas, the valley of Arroyo Pelque, near Lago Argentino, here also in the mountains at about 900 m. D.

P. 891: Add:

L. MAGNA (Phil.) Anal. Univ. Chil., 87, p. 108.

Syn. *L. stricta* (Phil.) of Macl., p. 891.

In North Patagonia, by Lago Nahuel-huapi; N. W. Patagonia, by Rio Paleno, Rio Aysen.

P. 891:

L. STRICTA (Phil.).

Is to be deleted, as it is identical with the foregoing species. D.

LASIORRHIRA SUAVEOLENS (DC.).

Is to be deleted, being identical with *L. gossipina* Hook. et Arn.—Macl., p. 889. D.

PEREZIA Lag.

P. 893:

P. LACTUCOIDES Less.

Also in W. Patagonia, Smith Canal. Chonos Archipelago.

P. LANIGERA Hook. & Arn.

Syn. *Perezia sessiliflora* Speg.

S. Patagonia, Golfo de San Jorge, Rio Deseado; not rare in the tableland of the Territory of Sta. Cruz, for example by Sta. Cruz Emporium, Manantiales (Richmond), Barranca Blanca, Cañadon de la China, near the valley of Arroyo Pelque, near Lago Argentino, in the valley of Rio Leona, in the mountains between Lago Viedma and Laguna Tar up to about 1,000 m.; in the valley of Arroyo Scheuen, by Korpon-kaiken, etc. D.

P. LECHLERI (Sch. Bip.).

Should be deleted, being identical with *Perezia pilifera* (Don.), p. 895.

P. 894:

P. OLERACEA Ok.

Should be deleted, being identical with *P. megalantha* Speg.

P. 895:

P. PATAGONICA Speg.

Also in the interior of S. Patagonia, for example in the valley of Rio Leona, between Arroyo Scheuen and Rio Sta. Cruz, by Manantia de la Trompa. D.

P. PEDICULARIÆFOLIA Less.

Also in W. Patagonia, for example in its northern section, in the Cordilleras by Rio Aysen, and in North Patagonia, in the territory of Neuquen.

P. PILIFERA (Don.)

Syn. *P. lechleri*, p. 893.

Is in S. Patagonia, chiefly or exclusively in the cordilleras, as by Rio Fósiles, at an altitude of nearly 800 m.; N. Patagonia in the Territory of Neuquen.

P. PYGMÆA (Cass.).

Should be deleted, being *Nassauvia pygmæa* (Cass.) Hook. fil.

Add Macl., p. 893:

P. BECKII Hook. & Arn.

Syn. *P. flavescens* Dus.

Leaves of sterile branches mucronate, entire, margins strongly curled, and prickly. Fertile branches erect, 1-headed. Involucre 5-seriate, of lanceolate scales, rough-glandular, marginally spiny. Corolla white. Syn. *Perezia flavescens* Dus.—Dus. Neue u. selten. Gefässpfl. Archiv. för Bot., Bd. 7, n. 2, p. 46, Taf. 6, fig. 5; Taf. 9, figs. 4–11. Not identical with *Perezia doniana* Less. Cf. Reiche, Flor. Chil., vol. iv, p. 447; nor with *Perezia recurvata* Less.; see Index Kewensis. This species is characteristic of the east coast of Patagonia, where it has been collected near Puerto San Jose, Puerto Madryn, Puerto St. Elena, Golfo de San Jorge (Puerto Mazaredo), Puerto Deseado.

P. 896: Add:

P. RECURVATA Less. var. SESSILIS Dus.—Dusén, Neue u. selt. Gefässpfl., etc., p. 46, Taf. 6, fig. 4.

Mid-Patagon., Territory of Chubut by the Colonie General San Martin.

Add Macl., p. 895:

P. PRENANTHOIDES Less.

Erect, 60–80 cm., hairy below, dichotomously panicled. Leaves hairy, rigid when dry, reticulate, the inner forming rosettes, petiolate, ovate-oblong, pinnatisect; their segments ovate-elliptical, spinose-lobed. Stem-leaves sessile, auricled and segmented. Heads numerous, turbinate-cylindrical. Involucre 4-seriate, its leaves narrow linear-oblong, acute, the inner ones 2 cm. shorter than the purplish flowers. Achenes oblong. North Patagonia, Territory of Neuquen.

Add Macl., p. 894:

P. LYRATA (Remy).

Syn. *Homoianthus lyratus* Remy.

Rhizome oblique, sending up rosettes of petiolate, oblong-spatulate leaves; smooth, toothed or runcinate, 10 cm. long. Scapes rough, glandular, with 1-3 spatulate leaves. Heads solitary, blue or white, terminal, large; involucre 4–5-seriate; outer scales oblong, toothed.

Central Chili in the Cordilleras; N. W. Patagonia, Rio Puelo; W. Patagonia, Rio Baker.

Add Macloskie, p. 896:

PEREZIA VARIABILIS Phil.

Radical rosettes of linear, spatulate-oblong leaves, attenuate to petiole, entire or lobed, 5–8 cm. Scape solitary in each rosette, many times longer, with 1–3 leaves. Head solitary, blue; involucre-scales 15 mm., linear, the outer pointed and toothed.

S. Chili, in the Cordilleras; N. W. Patagonia, Rio Puelo.

HYPOCHŒRIS Linn.

The material requisite for revising this genus is unfortunately wanting, and I am therefore compelled to content myself with a few remarks. D.

P. 896:

H. ARENARIA Gaud.

Skottsberg asserts that our Patagonian specimens have nothing to do with *H. arenaria* of Gaud., which he knows from its original home in the Falkland Isles. He regards our specimen as a glabrous form of *H. coronopifolia.*

P. 898:

H. BRASILIENSIS Gris.

Scarcely found in N. Patagonia; it may probably be deleted.

H. CORONOPIFOLIA (Comm.) and H. INCANA Hook. & Arn.

Are in my opinion identical. *H. incana* should be deleted, as *H. coronopifolia* has priority. D.

H. HOOKERI Phil.

Syn. *H. stenophylla* Dus.—Dusén, Neue u. selt. Gefässpfl.—Archiv. für Botanik, p. 49, Taf. 5, fig. 2; Taf. 9, figs. 1–2.

In S. Chili, in the Cordilleras; S. Patagonia, on sandy steppe by Manantiales (Richmond, near Sta. Cruz Emporium); near Lago Argentino on sandy steppe; Lago Viedma on drifting sand.

P. 900: Add:

H. LANATA Dus.—Dusén, Neue u. selt., Gefässpfl.—Archiv. für Botanik, p. 48, taf. 5, fig. 1; taf. 9, fig. 3.

S. Patagonia, near Lago Argentino, on sandy steppe and on drifting sand; Lago Viedma on drifting sand.

P. 900:

H. TENERIFOLIA (Remy).

The next species, *H. tenuifolia* (Hook. & Arn.) Gris. is very probably identical with *H. tenerifolia*, as supposed by Skottsberg, Flor. Feuerland, p. 37. Both marked by him as having achenes rostrate.

H. USHUAIÆ Skottsberg.

A perennial with thick rootstock sending up numerous stems. Leaves rosulate, obovate-lanceolate to lanceolate, narrowing to a petiole, 10–17 cm. long, 1 cm. more or less broad, acutish, repand, tooth remotely repand-toothed, glabrous. Scape leafless, with one head, about 12 cm. long, scape thick and tomentose upwards, and tomentose, or rufous. Involucre 12 mm. high, 10 mm. wide. Outer scales ovate-lanceolate, 4–5 mm. long, hispid-pilose; inner scales longer; innermost longest and thinnest. Pales of receptacle very narrow, filiform, tipped, scarious. Flowers, including achenes, about 12 mm. long; achenes (young only seen) with rostrum 7 mm.; pappus 7–8 mm., whitish.

S. Fuegia, in alpine regions above Ushuaia, swamps in the Bolax-heaths, about 700 m.

TARAXACUM Wiggers.

P. 900:

T. IBARI Phil.

The description published in Anal. Univ. Chil., Tom. LXXXVII, p. 324, is too brief and incomplete to give a clear conception of the systematic rank of this species. There is, however, in the diagnosis nothing inconsistent with the presumption of the identity of *T. ibari* with *T. magellanicum* Comm.; Sch. Bip. Philippi, actually, has expressed the supposition of these two species being identical. The question cannot be decided without examination of type-specimens.

This species is dubious.

Add Macl., p. 901, after line 8:

TARAXACUM MAGELLANICUM Comm. var. LOBATUM Dahlst.

Cf. Dahlstedt, über einige Comm. sijdamerikanische Taraxaca.—Arkiv for Bot., Bd. 6, no. 12, p. 5.

S. Patagonia, Territory of Sta. Cruz, near Lago Argentino and in the Baguales district; Magellan; Fuegia, Ushuaia; Navarin I.

T. magellanicum Comm. is an older name for another plant of which *T. lævigatum* is a synonym (fide Skottsb.).

T. OFFICINALE Weber.

Was got in prairies around Punta Arenas. *T. lævigatum* DC., often spoken of as a variety of the same, is also found here, varying much. The Belgican plants have leaves well developed, 6 cm. long; peduncles thick, 5 mm. diameter. (E. D. W.)

Syn. *T. taraxacum* (L.) Karst.—Macl., p. 901.

Better known under the name of *Taraxacum officinale* (Urth.) Wiggers. The present genus has in the last years, as well known, been matter of careful studies, and from these it was clear that the species established long ago—and thus also the old species now in view—were to be divided into a rather great number of new ones. Knowing specimens only from one of the districts mentioned by Macloskie it is impossible for me to state whether Macloskie's statement refers to a single or to several species. I am even not able to urge the species represented by the specimens collected by myself in Magellan. They belong very probably to a S. European species, as the eminent specialist of N. European, Arctic and S. American subantarctic species, Dr. H. Dahlstedt, has verbally informed me.

This being the case, *Taraxacum taraxacum* should be struck out. Macloskie's statement is quite indefinite. D.

T. TARAXACUM LÆVIGATUM (Willd.) Ok.—Macl., p. 901.

Should be deleted; not known from our district. Cf. Dahlstedt, l. c., p. 11.

T. TARAXACUM ALPINUM (Koch) Porter.

I have not seen any of the specimens collected by Hatcher. Macloskie's descriptions of this species, as well as of the others, are altogether too incomplete to permit the drawing of any conclusion. I think, however, that this N. American form does not occur in the peraustral part of S. America, and, very probably, Macloskie's statement of this form's having been found in our district is based on an obscure determination. Dubious; should in my opinion be struck out. D.

T. MAGELLANICUM Comm.; Sch. Bip. var. LOBATUM Dahlst., l. c., p. 6.

S. Patagonia, central part of Territorium of Sta. Cruz and near Lago Argentino; Magellan; Punta Arenas.

T. THUSIOCARPUM Dahlst., l. c., p. 15.

S. Patagonia, in the district of Ultima Esperanza.

Add Macl., p. 902:

T. (LEONTODON) HISPIDUM Linn.

Leaves radical, oblong-lanceolate, basiattenuate, sinuate-dentate, with hispid hairs, apically forked. Scape as long, bractless. Scales of involucre hirtellate. Achenes muricellate.

Dry parts of mountains of Europe.

Add Macl., p. 902:

SONCHUS ARVENSIS Linn.

According to Spegazzini, in S. Patagonia, by Rio Chico, and in Mid-Patagonia by Rio Chubut. Perennial, with creeping rootstocks; heads bright yellow; achenes transversely wrinkled. Introduced.

TROXIMON Nutt. (as *Agoseris* in Macl., p. 902).

T. AUSTRALIS (Phil.).

Unknown to me; probably identical with *Troximon pumilum* (Gaud.). D.

T. GLAUCUM Nutt.

I do not know of any evidence that the plant has been found north of Magellan Strait. D.

TROXIMON PUMILUM (Gaud.).—Macl., p. 903, sub *Agoseris pumila* DC.

Syn. *Agoseris pterocarpa* (Fisch. & Mey.).

Also in West Patagonia, upper valley of Rio Aysen in the mountains. Also *A. pumila* (DC.). It has been assigned to several genera. Skottsberg calls it *Troximum pumilum* (Gaud.). Gaudichard placed it under *Taraxacum*. Decandolle and Hooker placed it under *Macrorhynchus*. (*M. pterocarpus*, and *A. pterocarpus* are amongst its synonyms, fide Skottsb.)

Add Macl., p. 903:

T. LÆVIGATUM (Fisch. & Mey.) DC. Prodr., vii, p. 151.

Chili; North Patagonia, by Lago Nahuel-huapi.

P. 904:

HIERACIUM Linn. Hawkweed.

H. ANTARCTICUM d'Urv.

Syn. *H. philippii* Alboff.

South Fuegia; also in the coast district.

H. CHILENSE Less.

In Central and South Chili; W. Patagon., in the upper valley of the Aysen; the occurrence of this species on Navarin Id., in the southern part of the Fuegian Archipelago is, I think, very doubtful. D.

H. MAGELLANICUM Schultz.

Collected by Hatcher in the Cordilleras of S. Patagonia, the locality not indicated.

H. PHILIPPII Alboff.

Should be deleted, being identical with *H. antarcticum* d'Urv. (D. & Sk.)

H. PILOSELLA Linn.

Though I have not seen any specimen of the plant thus named by Macloskie, as collected by Hatcher in S. Patagonia, it can scarcely be doubted but there was a false determination; and in my opinion, the species should be deleted. D.

H. TRISTE Willd.

Macloskie's determination concerns *H. magellanicum* Schultz; and *H. triste* may be deleted.

P. 905, add:

H. AUSTRO-AMERICANUM Dahlst. Dusén, Neue u. selt. Gefässpfl.—Archiv. für Botanik, p. 51, Taf. 2, fig. 1, Taf. 9, figs. 14–16.

South Patagonia; Lago Argentino and Lago San Martin, in the steppe near the border of the forest. D.

Add Macl., p. 905:

ANISOCOMA Torr. & Gr.

Like *Hieracium*, but with outer involucral series of short, roundish scales, and pappus of 5–10 bristles, plumose above; receptacle plane, having hyaline, setiform scales subtending the florets; achenes 10-ribbed, silky, on a long attenuate base.

A. acaule Torr. & Gr., the only species. A low, subglabrous herb, with subradical pinnatifid leaves, and a large yellow head on long scape. Nevada of United States, and Cordilleras of South Patagonia (fide Skottsberg).

NOTE ON THE NEANTARCTIC ISLAND FLORA.

Wildeman concludes his Report of the Results of the S. Y. *Belgica* Expedition (1897–1899) by giving an interesting summary of the number of species of the different families of Phanerogams occurring in the several islands and coasts, excluding the inner mainland of Patagonia. We copy this, adding the number included in the Falkland Is., which are not given in his lists; nor are all the islands on the West Patagonian coast represented in his Report.

Species or varieties in

Wellington Is.	14	Navarin	68
Madre di Dios	1	Gable	6
Evangelistas	1	Picton	35
Desolation	69	Hoste	88
Camden	3	Burnet & Snalke	77
Basket	67	Sheep I.	1
Fuegia	487	Grevy	2
Londonderry	12	Wollaston	5

Chair	43	Hermite	56
Poor I.	2	Staaten Is	116
Horn	44	Falkland Is. (Port Stanley, after Birger)	112
Melville	44		
Britton	4		

Total, 1357 species.

Wildeman observes that no species is spread over the whole field and some of the islands contain endemic forms; but some which are now apparently localized will probably prove to be of more extensive distribution.

The following are the most widespread of these species:

Drymus winteri Forst., found in 14 of the 26 regions explored.

Cardamine antiscorbutica Banks & Sol., found in 13 of the 26 regions explored.

Nothofagus betuloides (Mirb.) Bl., found in 13 of the 26 regions explored.

Perezia magellanica, found in 13 of the 26 regions explored.

Chiliotrichum diffusum (Furst.) Dus., found in 12 of the 26 regions explored and in Falklands.

Poa flabellata (Lam.) Hook., found in 12 of the 26 regions explored.

Senecio acanthifolius Homb. & Jacq., found in 12 of the 26 regions explored.

Acæna pumila Vahl., found in 11 of the 26 regions explored.

Apium graveolens L., found in 11 of the 26 regions explored.

Crassula moschata Forst., found in 11 of the 26 regions explored.

Gunnera magellanica Lam., found in 11 of the 26 regions explored and in Falklands.

Oreobolus obtusangulus Gaud., found in 11 of the 26 regions explored and in Falklands.

Senecio smithii DC., found in 11 of the 26 regions explored.

Astelia pumila R. Br.; *Callixene marginata*; *Colobantus subulatus*; *Empetrum rubrum*; *Myrteola nummularia* found in 10 of the 26 regions explored and in Falklands.

Berberis ilicifolia; *Cotula scariosa*, found in 10 of the 26 regions explored (not in Falklands).

Escallonia serrata; *Lebetanthus americanus*, found in 10 of the 26 regions explored (not in Falklands).

Nanodea muscosa, *Rostkovia grandiflora*, found in 10 of the 26 regions explored (not in Falklands).

He also remarks that all these species occur in the American continent, mostly with extensive range. One, *Apium graveolens* L., is also found in other continents. Some other species are European, but of restricted American distribution. Most of the Fuegian forms occur on the mainland; and the islands doubtless contain many other continental forms, not yet reported from them. Thus probably the flora which now covers what are the vestiges of an ancient continent are the descendants of a vegetation of unique origin. (It is a question worthy of attention whether the similarity of the Falkland Is. vegetation with that of the continent is sufficient to justify the theory of an ancient land-connection.—G. M.)

ANTIQUITY OF THE ANTARCTIC FLORA.

A notice by E. Häckel about the Magellan Flora as related to that of Europe and North America, appears in Engler's Botan. Jahrbuch., 1907, xl (2); Häckel takes 83 species indigenous in Magellans-land, and identically, or vicariously represented in N. America and Europe; but wanting or extremely rare in the tropical Andes. These include 20 species of Gramineæ, 12 of Cyperaceæ, 36 other Monocotyledons and only 15 Dicotyledons. Hence he concludes that Gramineæ and Cyperaceæ are the most ancient of the flowering plants, being probably remains of an old flora, which included such Dicots as *Fagus*, *Veronica*, *Euphrasia*, and which is supposed to have migrated by peculiar routes from the North Temperate to the South Temperate zone. Their absence from the tropical Andes contra-indicates the assumption of their overland journey by the American Cordillera. More probably there was an ancient land-connection between Magellans-land and Australia, and New Zealand, as evidenced by numerous plant species common to these lands, and also struthious birds. The supposition of their having originated in the south and thence migrating northwards is refuted by the fact that such plants as *Primula farinosa* L. and *Gentiana prostrata* Haenk., have their nearest related forms not in the far south, but in Europe and Asia.

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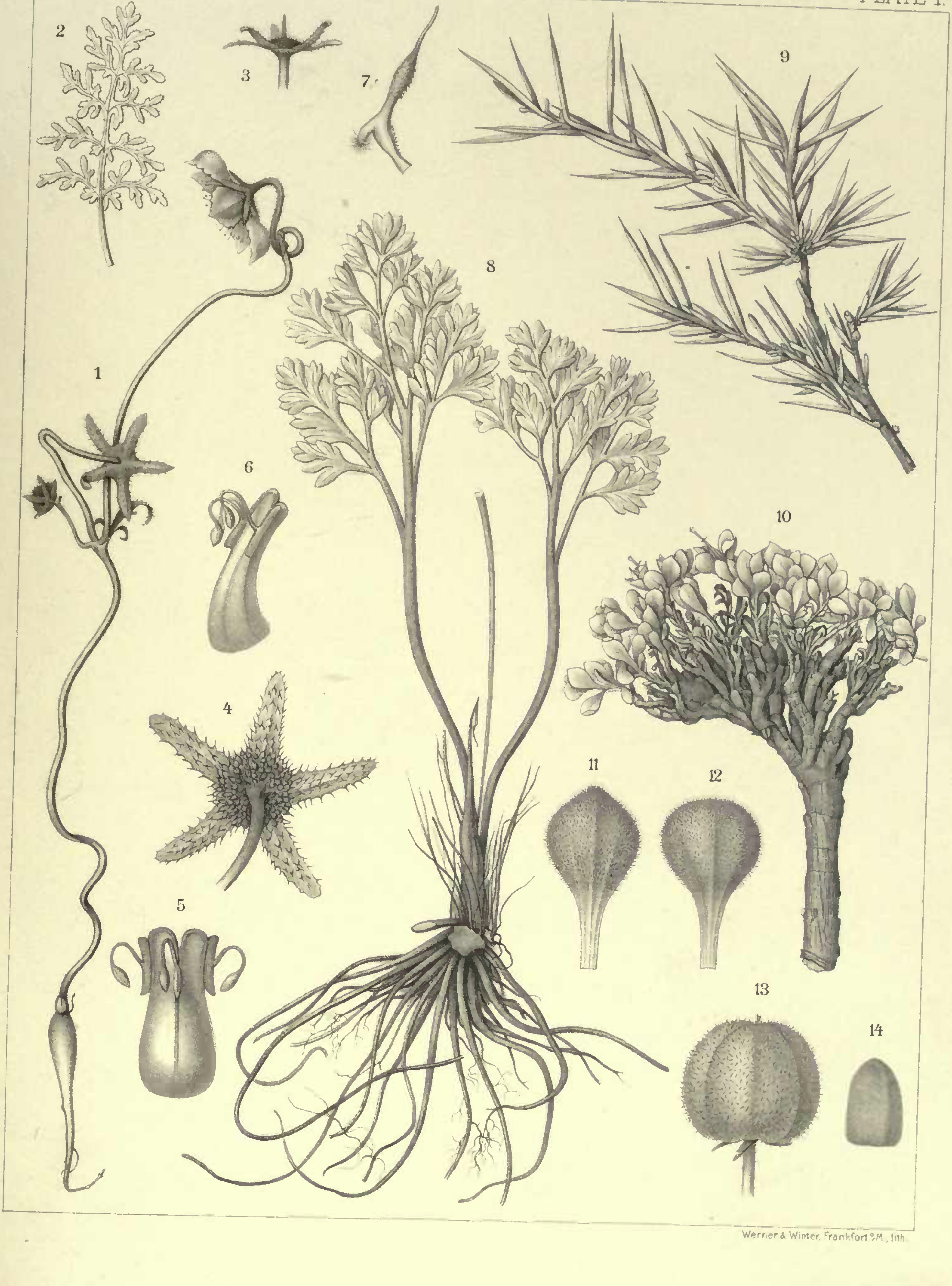
EXPLANATION OF PLATE I.

Figs. 1–7. LOASA ASTERIAS Dus. n. sp.

Fig. 1. The plant, natural size.
Fig. 2. Leaf, natural size.
Fig. 3. Young capsule, natural size.
Fig. 4. Capsule, from the under side, enlarged $\frac{2}{1}$.
Fig. 5. Scale from the dorsal aspect, enlarged $\frac{5}{1}$.
Fig. 6. Lateral view of scale, enlarged $\frac{5}{1}$.
Fig. 7. Staminode, enlarged $\frac{5}{1}$.
Fig. 8. HAMADRYAS DELPHINII Phil., the plant, natural size.
Fig. 9. CHUQUIRAGA HYSTRIX D. Don. Branch, natural size.

Figs. 10–14. EUPHORBIA DASYCLADA Dus. n. sp.

Fig. 10. The plant, natural size.
Figs. 11–12. Leaves, enlarged $\frac{3}{1}$.
Fig. 13. Capsule, enlarged $\frac{6}{1}$.
Fig. 14. Seed, enlarged $\frac{6}{1}$.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1-7 LOASA ASTERIAS Dus. 8 HAMADRYAS DELPHINI Phil.
9 CHUQUIRAGUA HYSTRIX D Don. 10-14 EUPHORBIA DASYCLADA Dus.

EXPLANATION OF PLATE II.

Figs. 1–6. Senecio chrysanthemum Dus. n. sp.

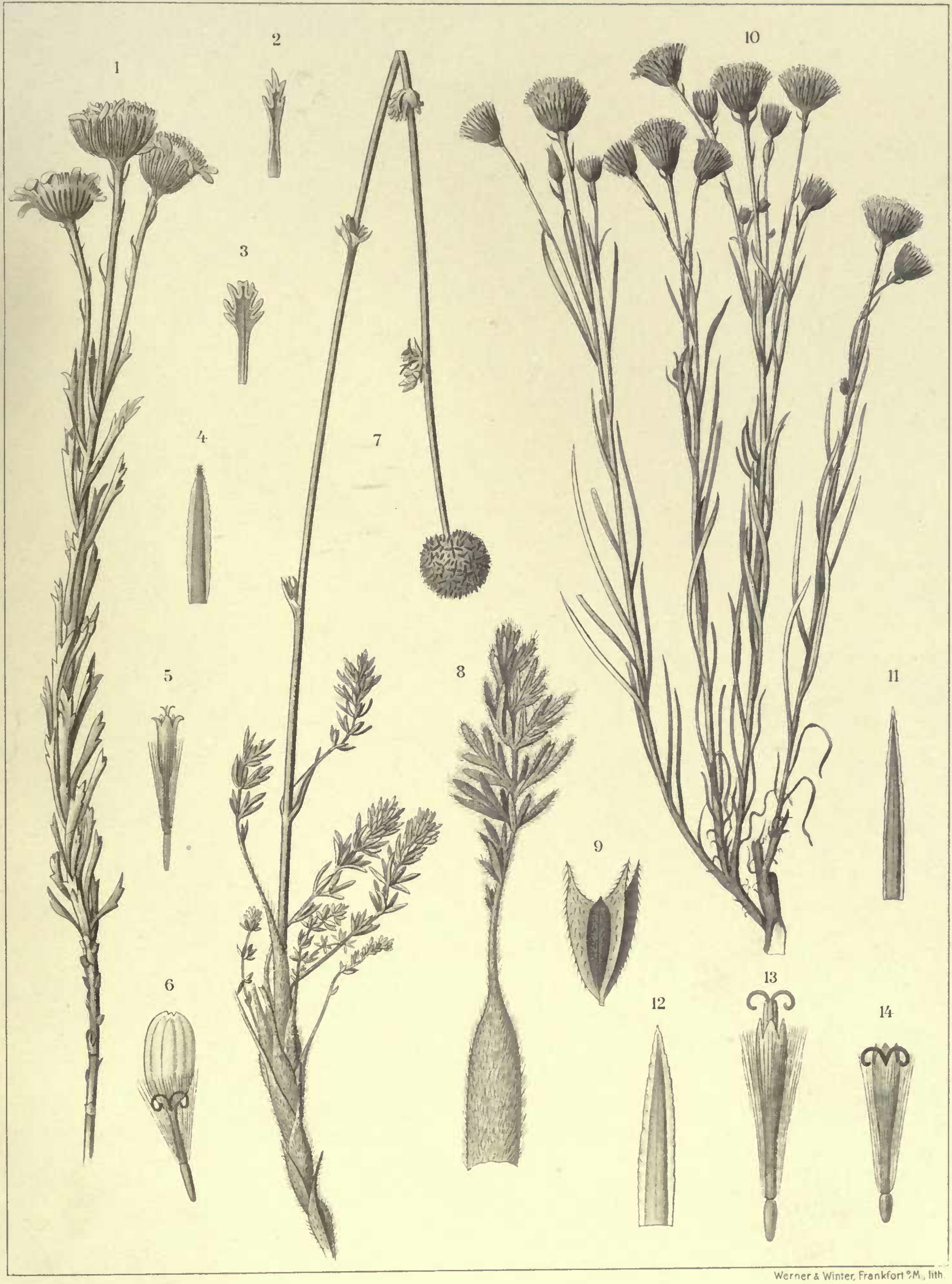
Fig. 1. The plant, natural size.
Figs. 2, 3. Leaves expanded, natural size.
Fig. 4. Involucral scale, enlarged $\frac{3}{1}$.
Fig. 5. Disk flower, enlarged $\frac{3}{1}$.
Fig. 6. Ligule, enlarged $\frac{3}{1}$.

Figs. 7–9. Acæna pterocarpa Dus. n. sp.

Fig. 7. The plant, natural size.
Fig. 8. Leaf, enlarged $\frac{2}{1}$.
Fig. 9. Seed, enlarged $\frac{4}{1}$.

Figs. 10–14. Senecio erigeroides Dus. n. sp.

Fig. 10. The plant, natural size.
Figs. 11–12. Involucral scales, enlarged $\frac{5}{1}$.
Fig. 13. Flower from center of capitulum, enlarged $\frac{5}{1}$.
Fig. 14. Flower from near edge of capitulum, enlarged $\frac{5}{1}$.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1-6 SENECIO CHRYSANTHEMUM Dus. 7-9 ACAENA PTEROCARPA Dus
10-14 SENECIO PELQUENSIS Dus.

EXPLANATION OF PLATE III.

Figs. 1–4. Nassauvia sceptrum Dus. n. sp.

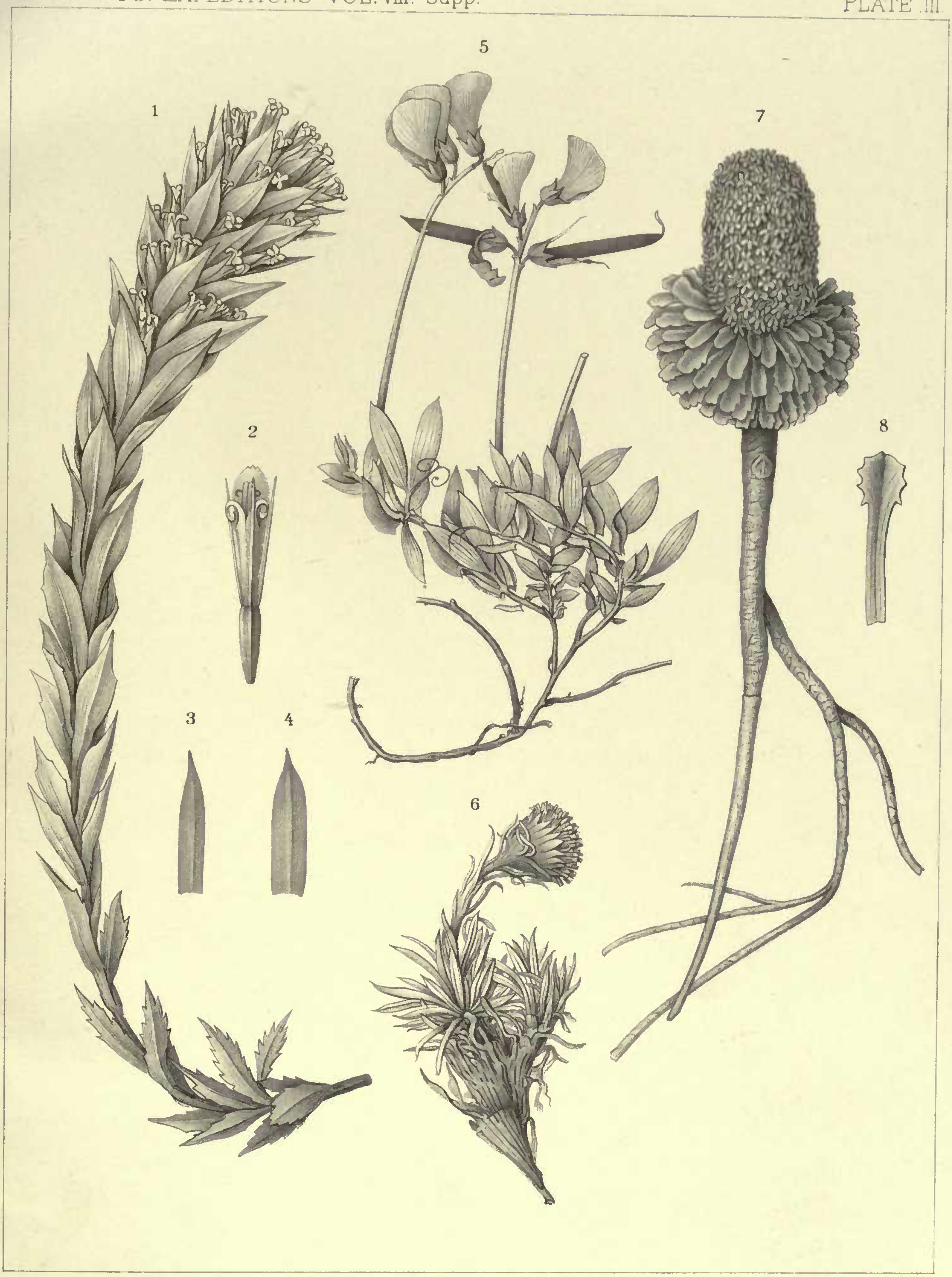
Fig. 1. The plant, natural size.
Fig. 2. Flower enlarged $\frac{2}{1}$.
Fig. 3. Involucral scales, enlarged $\frac{2}{1}$.

Fig. 5. Lathyrus magellanicus Lam. var. campestris Dus. nov. var. The plant, natural size.

Fig. 6. Culcitium tenellum Dus. nov. sp. The plant, natural size.

Figs. 7, 8. Valeriana foncki Phil. var. spiciformis Dus. nov. var.

Fig. 7. The plant, natural size.
Fig. 8. Leaf, enlarged $\frac{2}{1}$.



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1-4 NASSAUVIA SCEPTRUM Dus 5 LATHYRUS MAGELLANICUS Lam, var. CAMPESTRIS Dus.
6 CULCITIUM TENELLUM Dus. 7,8 VALERIANA FONCKI Phil. var, SPICIFORMIS Dus.

EXPLANATION OF PLATE IV.

Figs. 1, 2. Dryopteris spectabilis (Fée).

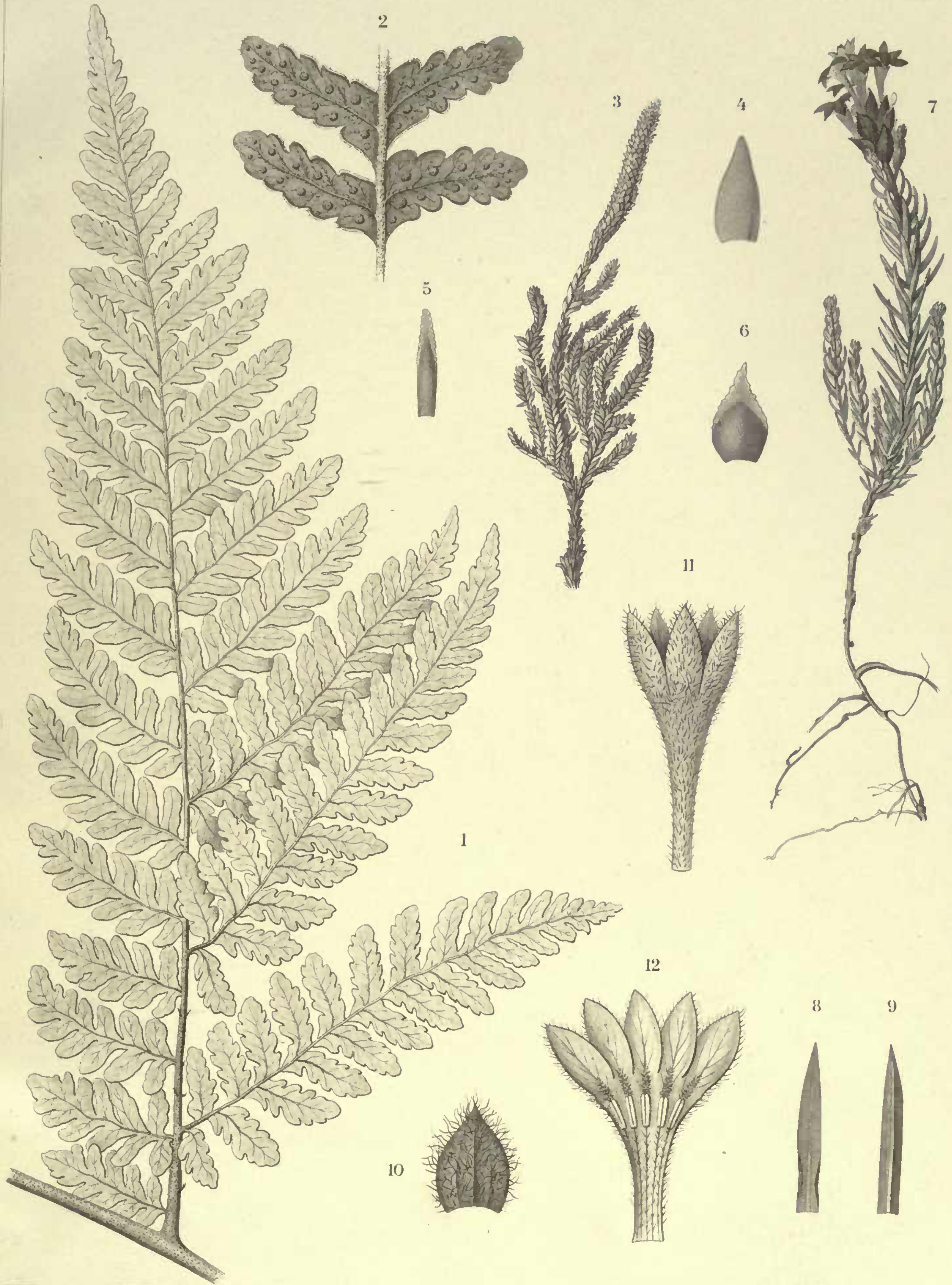
Fig. 1. Pinna, natural size.
Fig. 2. Pinnulæ, enlarged $\frac{2}{1}$.

Figs. 3–6. Lycopodium gayanum Remy.

Fig. 3. The anterior part of the plant, natural size.
Fig. 4. Leaf from upper side of branch, enlarged $\frac{5}{1}$.
Fig. 5. Leaf from the stem, enlarged $\frac{5}{1}$.
Fig. 6. Sporophyll, enlarged $\frac{5}{1}$.

Figs. 7–12. Arjona chubutensis Dus. n. sp.

Fig. 7. The plant, natural size.
Figs. 8, 9. Leaves, enlarged $\frac{3}{1}$.
Fig. 10. Bract, enlarged $\frac{3}{1}$.
Fig. 11. Perigonium, enlarged $\frac{3}{1}$.



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1-2 DRYOPTERIS SPECTASILIS (Fée) 3-6 LYCOPODIUM GAYANUM Remy
7-12 ARJONA CHUBUTENSIS Dus.

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